CASSETTE TAPE DECK

MODEL CS-34D

ALSO APPLICABLE TO MODEL CS-34
CASSETTE TAPE RECORDER

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SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

I. SPECIFICATIONS

An asterisk next to a figure indicates the minimum guaranteed performance.

TRACK SYSTEM		4 track 2 channel stereo system
TAPE SPEED		1-7/8 ips. (4.75 cm/sec) ±3%
WOW/FLUTTER		Less than 0.13% WRMS *Less than 0.28% RMS
TOTAL WOW/FLUTTER		*Less than 0.35% RMS
FREQUENCY RESPONSE	LOW NOISE TAPE	40 to 13,000 Hz ±3 dB *40 to 12,000 Hz ±3 dB
	CHROME TAPE	40 to 15,000 Hz ±3 dB *40 to 13,000 Hz ±3 dB
DISTORTION FACTOR		Less than 1.5%
TOTAL DISTORTION FACTOR		*Less than 3%, 1,000 Hz, "0" VU recording
SIGNAL TO NOISE RATIO		Better than 52 dB, 1,000 Hz, "0" VU recording *Better than 48 dB
TOTAL SIGNAL TO NOISE RATIO		*Better than 43 dB
RESIDUAL NOISE		Less than 10 mV/8 ohm load (CS-34 only)
OUTPUT	LINE OUTPUT	0.775V (0 dBm ±1.5 dB) using a 333 Hz, "0" VU pre-recorded tape
	DIN OUTPUT	0.55V (-3 dBm ±1.5 dB) using a 333 Hz, "0" VU pre-recorded tape
	HEADPHONE OUTPUT	30 mV/8 ohm using a 333 Hz, "0" VU pre-recorded tape
	SPEAKER OUTPUT	2W/8 ohm each channel (CS-34 only)
INPUT/IMPEDANCE	MIC INPUT	More than 0.35 mV/4.7 k ohm
	LINE INPUT	More than 80 mV/510 k ohm
	DIN INPUT	More than 3 mV/25 k ohm
RECORDING/PLAYBACK LEVEL		0 dBm ±2 dB, 1,000 Hz, "0" VU recording
CROSS TALK		Better than 25 dB, 1,000 Hz +3 VU recording
ERASE RATIO		Better than 70 dB *Better than 65 dB
RECORDING BIAS FREQUENCY		60 ±5 kHz
BIAS LEAK		Less than -45 VU with recording volume at position "6".
RECORDING TIME		90 min. using a C-90 cassette tape
FAST FORWARD AND REWIND TIME		Within 80 seconds using a C-90 cassette tape.
HEAD	RECORDING/PLAYBACK HEAD	4 track 2 channel recording/playback head Type: P4-303 Gap: 1 micron Impedance: 1,050 ohm ±25% at 1 kHz D.C. Resistance: 110 ohm
	ERASE HEAD	2 track 1 channel erase head Type: E4-100 Gap: 0.3 mm Impedance : 730 ohm ±10% at 100 kHz D.C. Resistance: 5.2 ohm
MOTOR		Mechanical Governor Type D.C. Motor Type: MHT-5PS Specified Voltage: 13.2V Revolutions: 2,200 rpm
TRANSISTORS/F.E.T.		2SA628 (E) (F) . . . . . 4 2SC458LG (C) (D). . . . . 4 2SC945L (Q) (R) . . . . . 2 2SC1096 (K) (L) . . . . . 2 2SC1647 (R) (S) (E) . . . . . 14 2SC1648 (R) (S) (E) (U) . . . 6 2SK34 (D) 2
DIODES		1N60 . . . . . 6 1N4001 . . . . . 8 1S2473VE . . . . . 8 SR-103D . . . . . 1 10D05 . . . . . 4 (CS-34 only) WZ-085 . . . . . 1 WZ-135 . . . . . 1 WZ-192 1
I.C.		LC-4032 . . . . . 2 (CS-34 only)
POWER REQUIREMENT		Universal Models: 110 to 240V A.C., 50/60 Hz Japan Models: 100V A.C., 50/60 Hz CSA Models: 120V A.C., 60 Hz CEE Models: 220V A.C., 50 Hz BSI Models: 240V A.C., 50 Hz
POWER CONSUMPTION		CS-34D: 12W CS-34: 25W

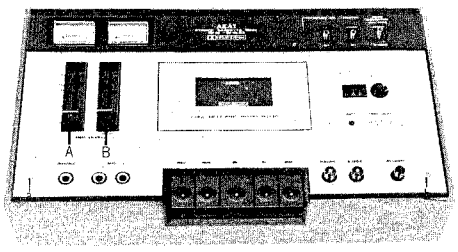
DIMENSIONS	378(W) x 110(H) x 225(D) mm (14.9" x 4.3" x 8.9") (includes all protruding parts)
WEIGHT	CS-34D: 4.8 kg (10.6 lbs.) CS-34: 4.9 kg (10.8 lbs.)

NOTES: 1. Specifications determined with Low Noise Tape unless otherwise noted.
2. Specifications subject to change without notice.

II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

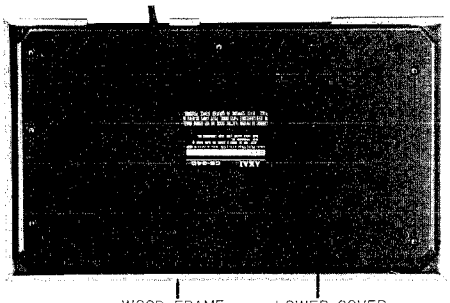
1



CONTROL KNOBS

2

3



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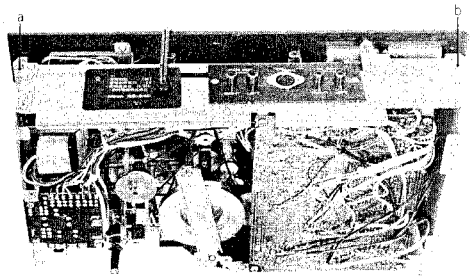
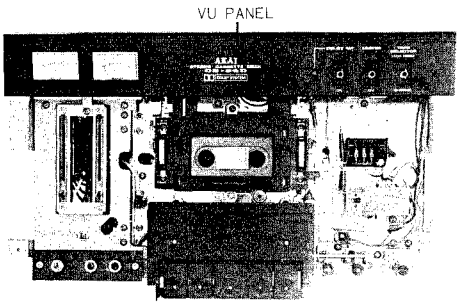


SCREWS

5



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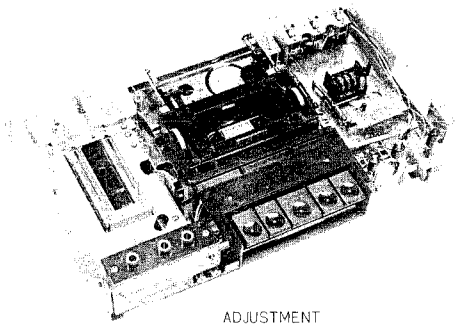
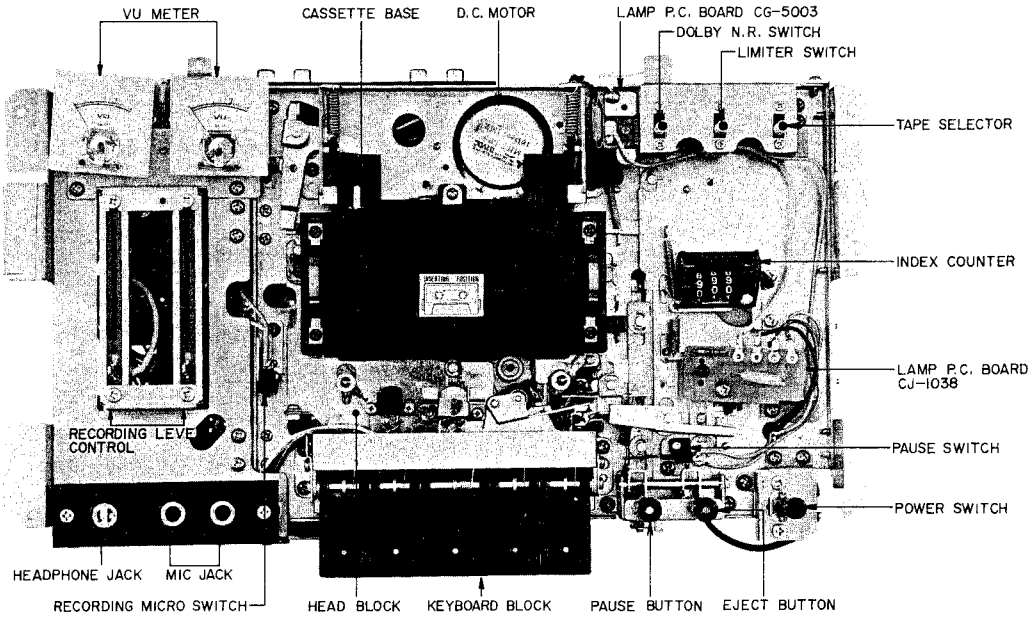
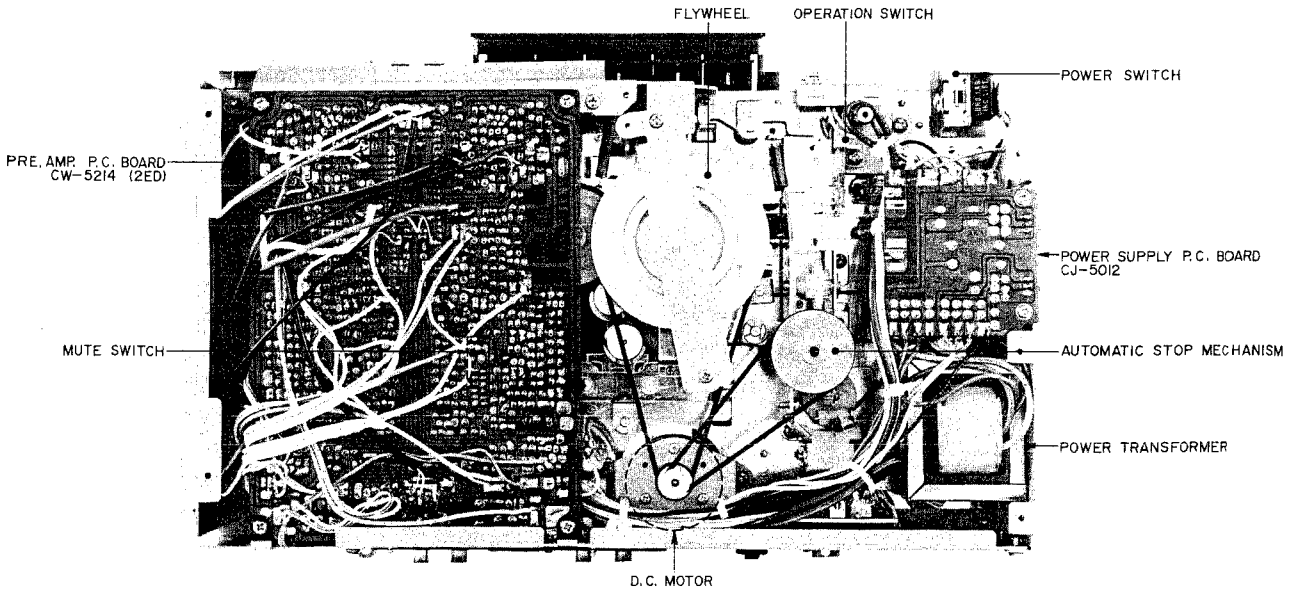


ADJUSTMENT

III. ARRANGEMENT OF PRINCIPAL PARTS





IV. MECHANISM ADJUSTMENTS

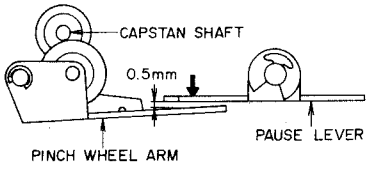


Fig. 1

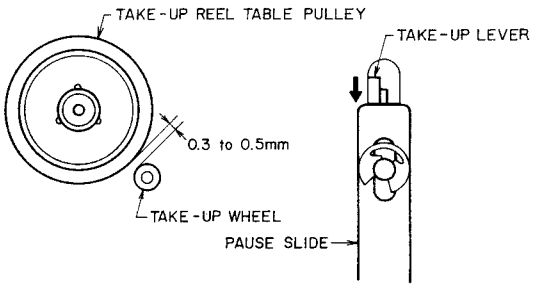


Fig. 2

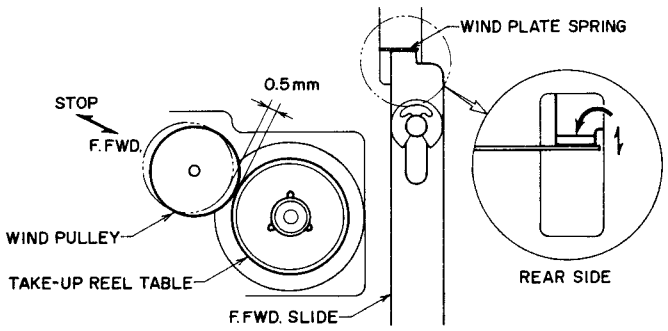


Fig. 3

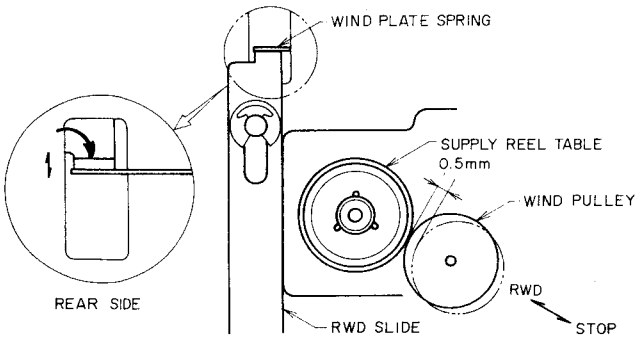


Fig. 4

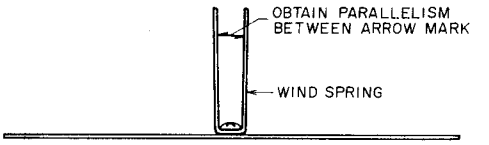


Fig. 5

1. PAUSE LEVER ADJUSTMENT (See Fig. 1)

Bend the part of pause lever indicated by arrow in Fig. 1 so that at playback mode, the gap between the pinch wheel arm and pause lever is more than 0.5 mm.

2. ADJUSTMENT OF GAP BETWEEN TAKE-UP REEL TABLE AND TAKE-UP WHEEL AT PAUSE MODE (See Fig. 2)

Bend the take-up lever in the direction of the arrow in Fig. 2 so that when the machine is set to pause mode from playback mode, the take-up wheel completely separates from take-up reel table pulley and the gap width is from 0.3 to 0.5mm.

3. F.FWD SLIDE ADJUSTMENT (See Fig. 3)

Adjust by bending the F.FWD Slide so that when the F.FWD and STOP buttons are gently braked simultaneously, the wind pulley separates from the take-up reel table and this gap width is 0.5mm.

4. RWD SLIDE ADJUSTMENT (See Fig. 4)

Adjust by bending the Rewind Slide so that when the RWD and STOP Buttons are gently braked simultaneously, the wind pulley separates from the Supply Reel table and this gap width is 0.5mm.

NOTE: In the event that by bending the F.Fwd and Rwd Slides a 0.5mm gap on both cannot be attained, check the wind spring for parallelism.

If it is not parallel, remove and bend wind spring by hand to obtain parallelism. (See Fig. 5)

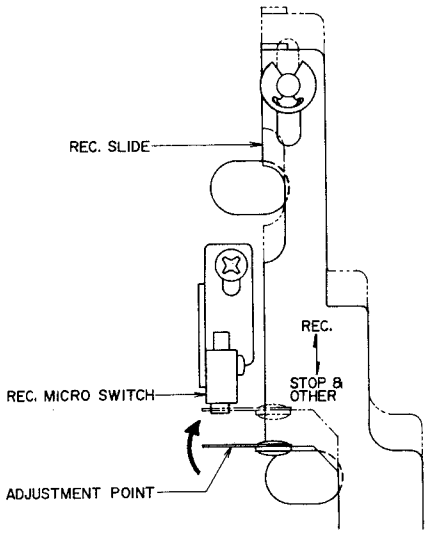


Fig. 6

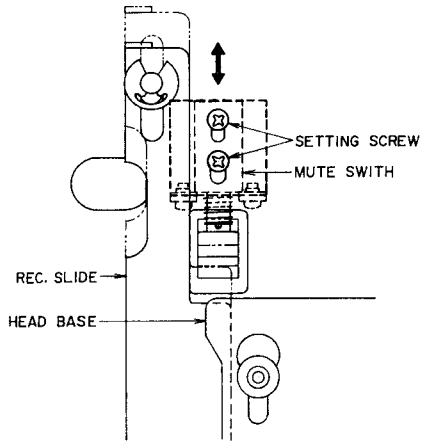


Fig. 8

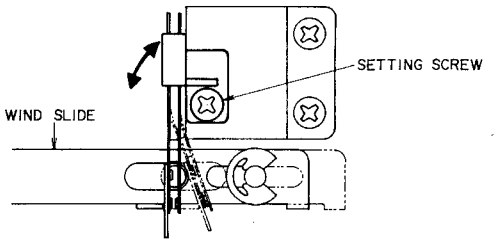


Fig. 7

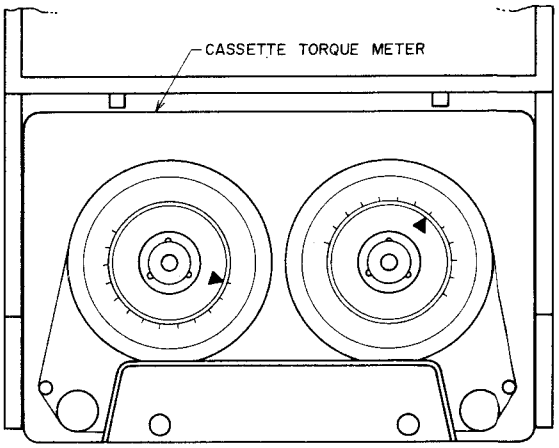


Fig. 9

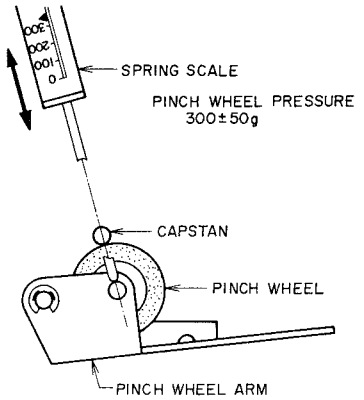


Fig. 10

5. REC. SLIDE ADJUSTMENT (See Fig. 6)

At Stop mode, bend adjustment point (phosphor bronze plate) of Rec. Slide toward arrow. (Fig. 6) When the Rec. Button is depressed, the phosphor bronze plate must properly turn ON the Rec. microswitch.

6. OPERATION SWITCH POSITION ADJUSTMENT (See Fig. 7)

Loosen setting screw and move switch base in direction of arrow in Fig. 7 until when PLAYBACK, F.FWD or RWD mode is effected, the wind slide turns ON Operation Switch perfectly and fix setting screw to maintain optimum condition.

7. MUTE SWITCH ADJUSTMENT (See Fig. 8)

Loosen setting screw, and move Mute Switch back and front and set so that at Playback or Recording mode, Head Base turns OFF the Mute Switch.

8. TAKE-UP TORQUE AT VARIOUS MODES AND TORQUE MEASURING METHOD (See Fig. 9)

As shown in Fig. 9, set a cassette torque meter on cassette base, and take a reading of the ▲ indication at each respective mode.

Playback mode	50 ± 10 gr-cm
F.FWD mode	80 gr-cm
RWD mode	80 gr-cm

NOTE: Take the torque meter indication value +10 gr-cm as recorder Take-up torque.

9. PINCH WHEEL PRESSURE MEASURING METHOD (See Fig. 10)

As shown in Fig. 10, at playback mode, press the pinch wheel arm toward shaft with a spring scale, and when the pinch wheel separates from the capstan, read the spring scale indication.

V. HEAD ADJUSTMENT

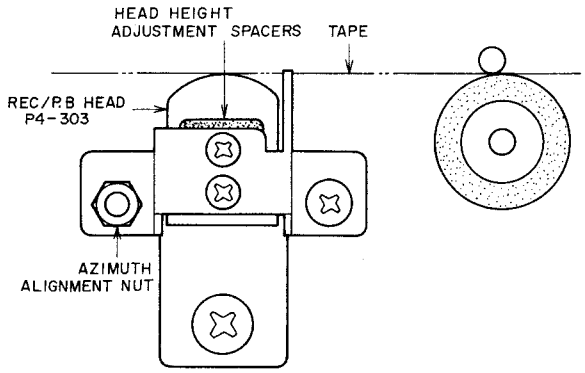


Fig. 11

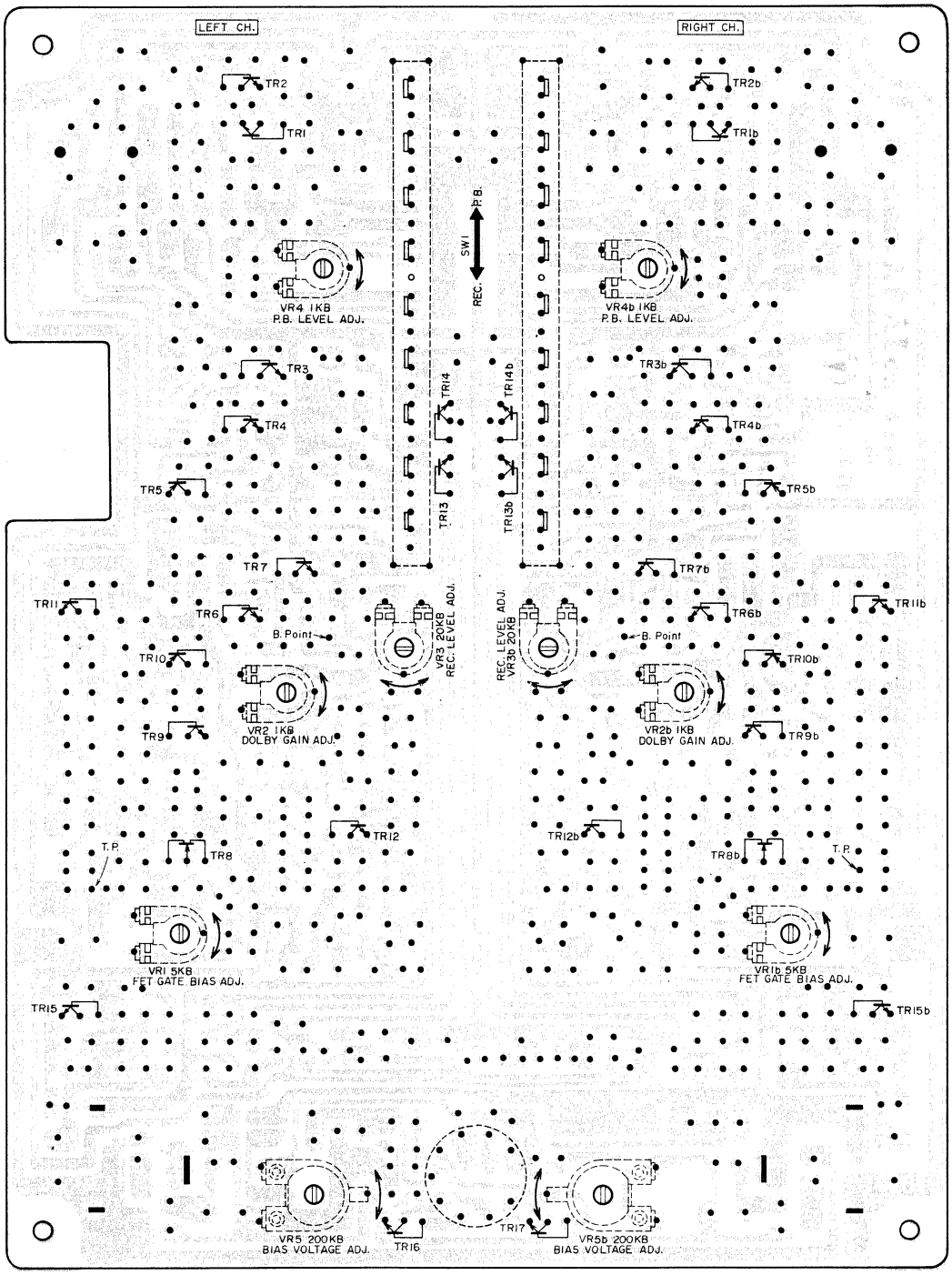
NOTES:
1) Clean heads prior to head adjustment.
2) Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3) Use only new tape as level variation is likely to occur when using old tape.
4) Demagnetized heads with head demagnetizer before and after head adjustment.
5) As perfect head adjustments are vital to tape deck or recorder performance, be sure that these adjustments are carried out properly.

VI. AMPLIFIER ADJUSTMENTS

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	Playback Level Adjustment	333 Hz "0" VU Test Tape	Play	VR-4 1 k(B)	0 ± 1.5 dBm	
2	Recording Level Adjustment (Low Noise Tape)	Low Noise Blank Tape, 1,000 Hz, "0" VU recording	Rec and Play	VR-3 20 k(B) (CW-5214)	0 ± 2 dBm	Set Tape Selector to LOW NOISE
3	Frequency Response Adjustment (Low Noise Tape)	Low Noise Blank Tape, 1,000 Hz, 10,000 Hz, -20 VU recording	Rec and Play	VR-5 200 k(B) (CW-5214)	10,000 Hz 0 ± 1.0 dB in relation to 1,000 Hz	

Chart 1

NOTES: 1. Set Tape Selector to LOW NOISE
2. Set Dolby N.R. Switch to OFF position.
3. Use new tape
4. The letter b following an adjustment parts number indicates "right channel"



Adjustment points of Pre-Amp P.C. Board (CW-5214 2ED) Fig. 12

VII. DOLBY N.R. CIRCUIT ADJUSTMENT

Adjust Dolby N.R. Circuit carefully as following procedures in Chart 2.

Connecting Method:

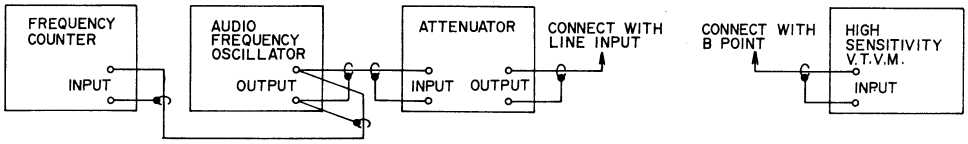


Fig. 13

NOTES:

1. Since crucial frequency and level etc. is determined by Dolby N.R. Circuit adjustment, be sure to use only correctly calibrated measuring instruments.
2. Level deviation must be within ±0.5 dBm.
3. Paint lock all semi-fixed resistors following adjustments.
4. Because adjustment error will occur from recording bias leakage, be sure to disconnect power supply lead wire from Oscillator circuit prior to Dolby N.R. Circuit adjustment.
5. Refer to Fig. 12.

Item	Supply Signal	Mode	Dolby Switch	T.P.	Adjustment Part	Result; B point Level	Remarks
19 kHz Filter	19 kHz Line Input	REC	ON	–	L2 23 mH	Minimum Level	
Recording Dolby Adjustment	5 kHz Line Input	REC	OFF	GND	External Attenuator	+2 dBm	Keep Rec. Level Volume at maximum
	5 kHz Line Input	REC	OFF	GND	Reduce Input 30.5 dBm	-28.5 dBm	
	5 kHz Line Input	REC	ON	GND	VR-2 1 kB CW-5214	-18.5 dBm	
	5 kHz Line Input	REC	ON	Disconnect from GND	VR-1 5 kB CW-5214	-20.5 dBm 2 dBm decrease	
Playback Dolby Confirmation	5 kHz -28.5 dBm recorded Test Tape	PLAY	OFF	–	–	or Line Out -28.5 dBm	
	5 kHz -28.5 dBm recorded Test Tape	PLAY	ON	–	–	or Line Out -38.5 dBm	

Chart 2

Noise reduction circuit made under license from Dolby Laboratories Inc.
The word 'DOLBY' and the Double-D symbol are trademarks of Dolby Laboratories Inc.

VIII. D.C RESISTANCE OF VARIOUS COILS

Part	Designation	D.C. Resistance
Headphone output Transformer	S14-123S	Primary: 262 ohm Secondary: 1.8 ohm
Oscillator Coil	OT-903	Between 1–3: 0.2 ohm Between 4–6: 1.2 ohm Between 7–9: 8.6 ohm
Erase Head	E4-100	5.2 ohm
Recording/Playback Head	P4-303	110 ohm

Chart 3

NOTE: Resistance values shown in this chart are average values.

IX. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C. BOARD INTERCHANGEABILITY CHART

P.C. Board	CS-34D	CS-34
Pre. Amp. P.C. Board	CW-5214 (2ED)	*CW-5214 (2ED)
Power Supply P.C. Board	CJ-5012	CJ-5012
Lamp P.C. Board	CJ-1038	CJ-1038
Lamp P.C. Board	CG-5003	CG-5003
Main Amp. P.C. Board		CJ-5023
Power Supply P.C. Board (2)		CJ-5022

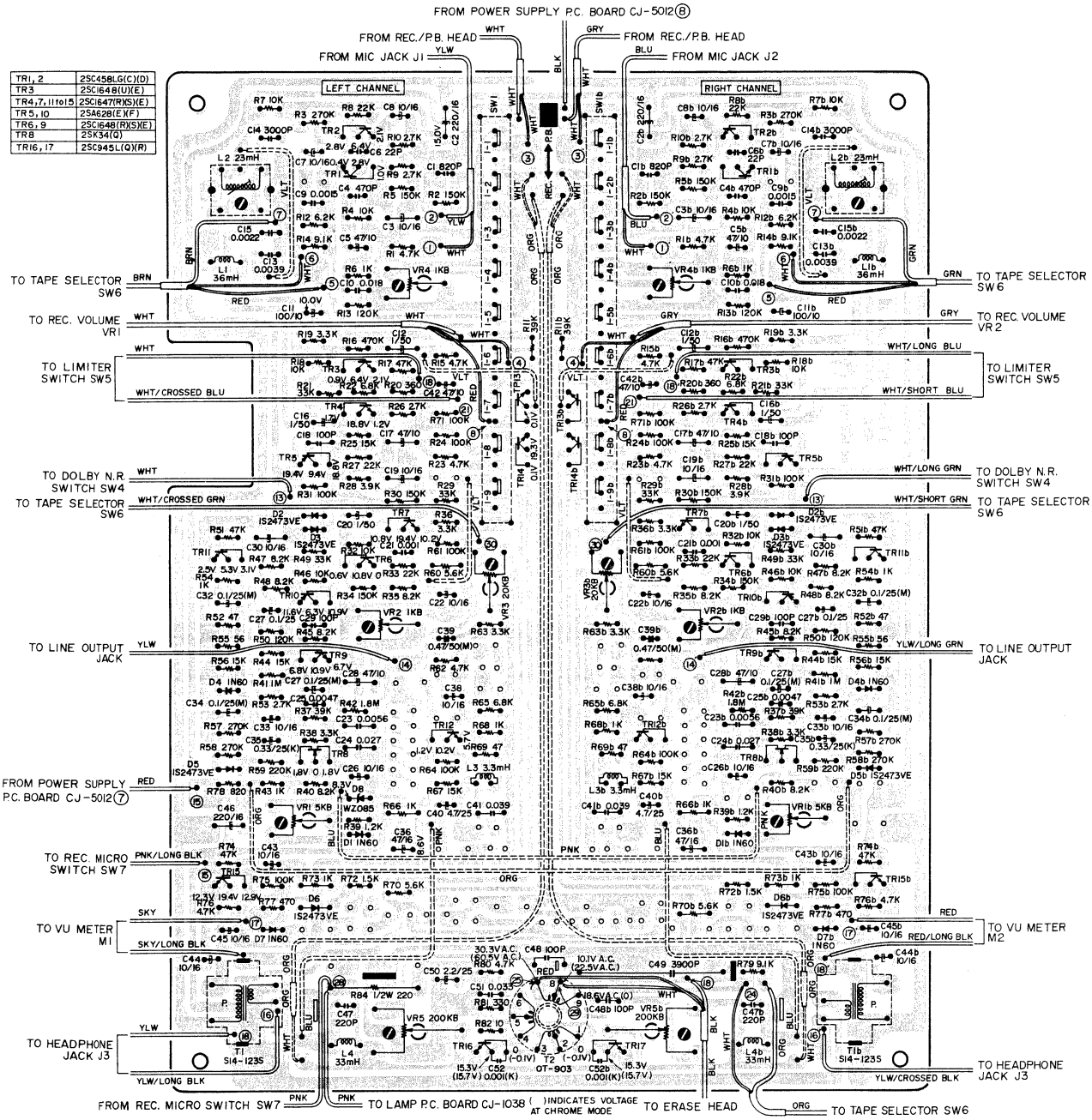
Chart 4

NOTE: * ····· Not interchangeable

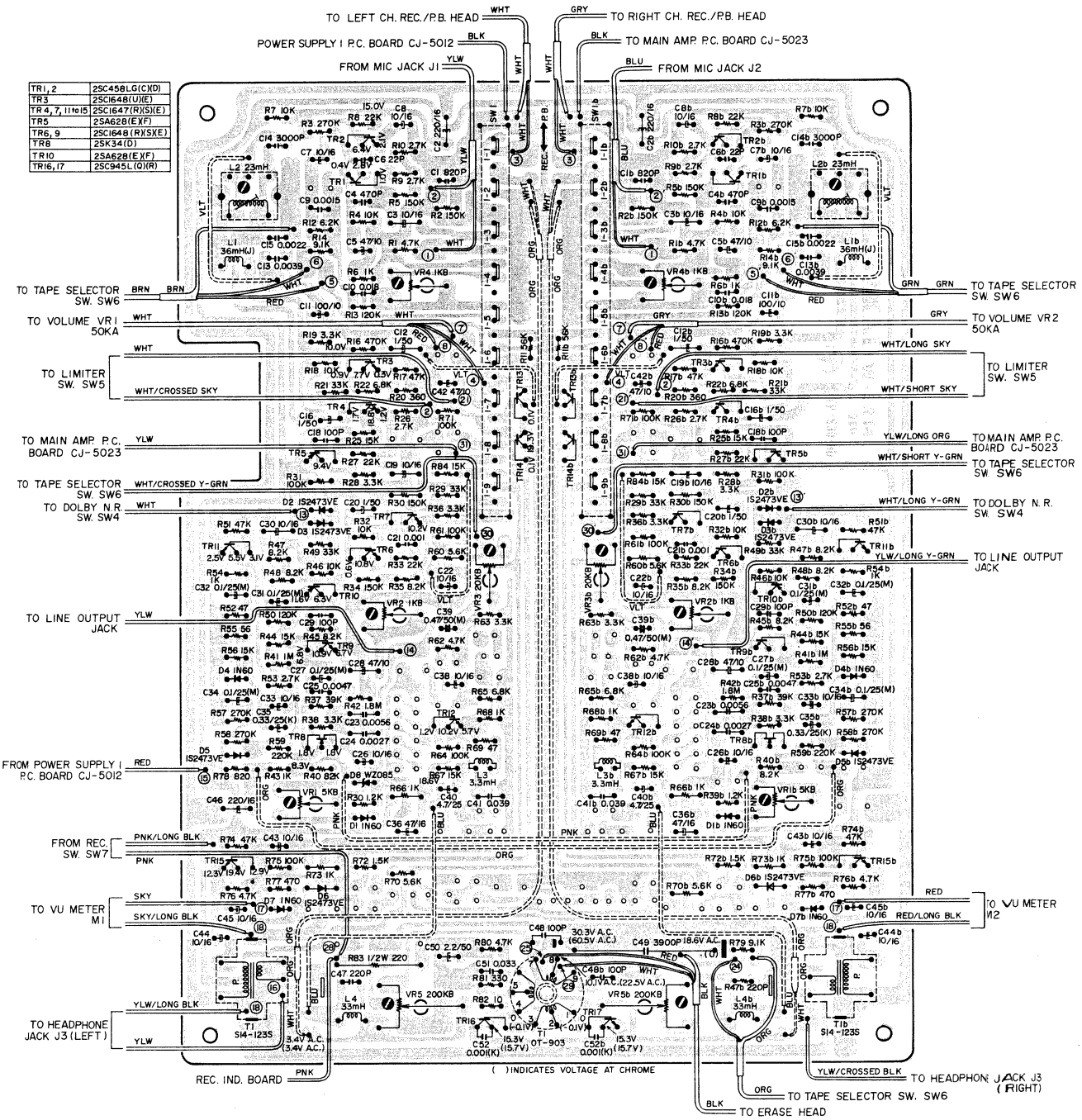
2. COMPOSITE VIEWS OF COMPONENTS

1) PRE AMP. P.C. BOARD (CW-5214)

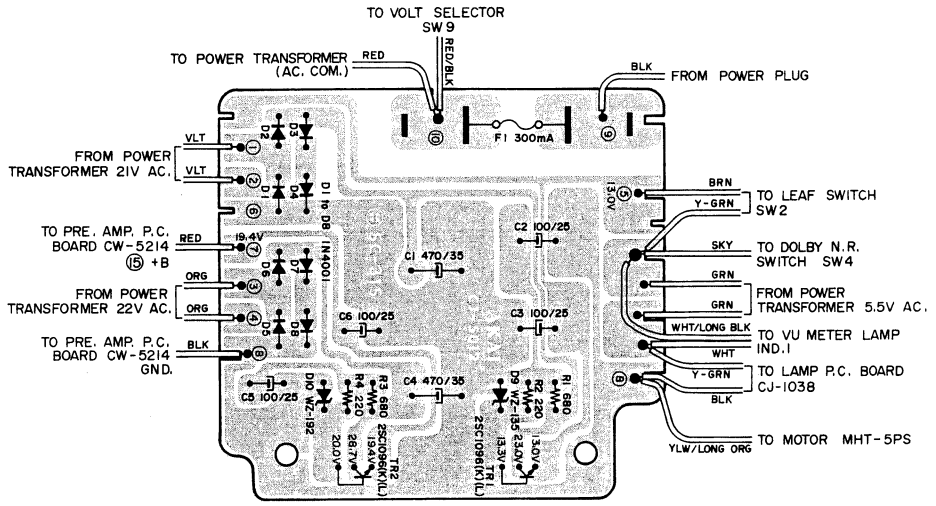
CS-34D



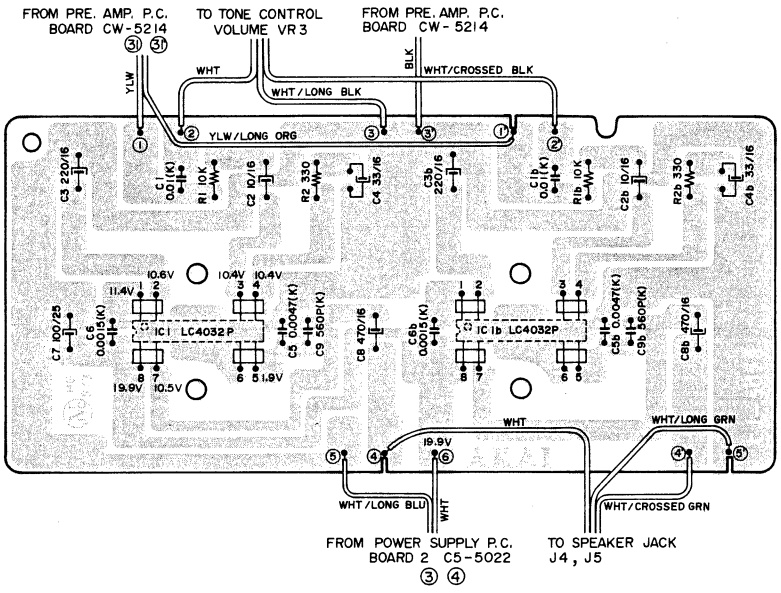
CS-34


TO LEFT CH. REC./P.B. HEAD
TO RIGHT CH. REC./P.B. HEAD
POWER SUPPLY I P.C. BOARD CJ-5012
TO MAIN AMP. P.C. BOARD CJ-5023
FROM MIC JACK J1
FROM MIC JACK J2
TR1, 2 2SC458LG(C)(D)
TR3 2SC1648(U)(E)
TR4, 7, 11 to 15 2SC1647(R)(S)(E)
TR5 2SA628(E)(F)
TR6, 9 2SC1648(R)(S)(E)
TR8 2SK34(D)
TR10 2SA628(E)(F)
TR16, 17 2SC945L(Q)(R)
TO TAPE SELECTOR SW. SW6
TO VOLUME VR1 50KA
TO VOLUME VR2 50KA
TO LIMITER SW. SW5
TO MAIN AMP. P.C. BOARD CJ-5023
TO TAPE SELECTOR SW. SW6
TO DOLBY N.R. SW. SW4
TO LINE OUTPUT JACK
FROM POWER SUPPLY I P.C. BOARD CJ-5012
FROM REC. SW. SW7
TO VU METER M1
TO VU METER M2
TO HEADPHONE JACK J3 (LEFT)
TO HEADPHONE JACK J3 (RIGHT)
REC. IND. BOARD
TO ERASE HEAD
( ) INDICATES VOLTAGE AT CHROME

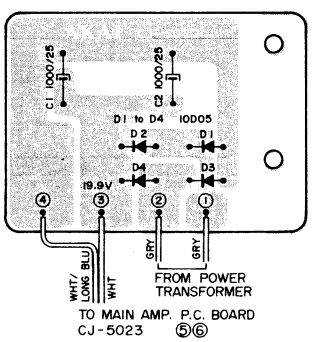
2) POWER SUPPLY P.C. BOARD (CJ-5012)



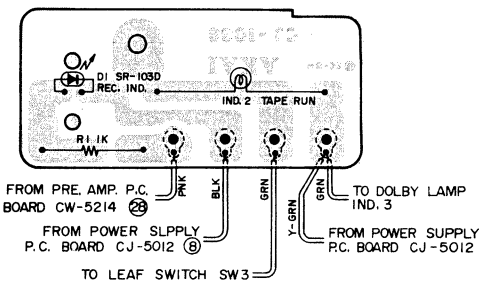
3) MAIN AMP. P.C. BOARD (CJ-5023)



4) POWER SUPPLY P.C. BOARD (2) (CJ-5022)



5) LAMP P.C. BOARD (CJ-1038)



SECTION 2

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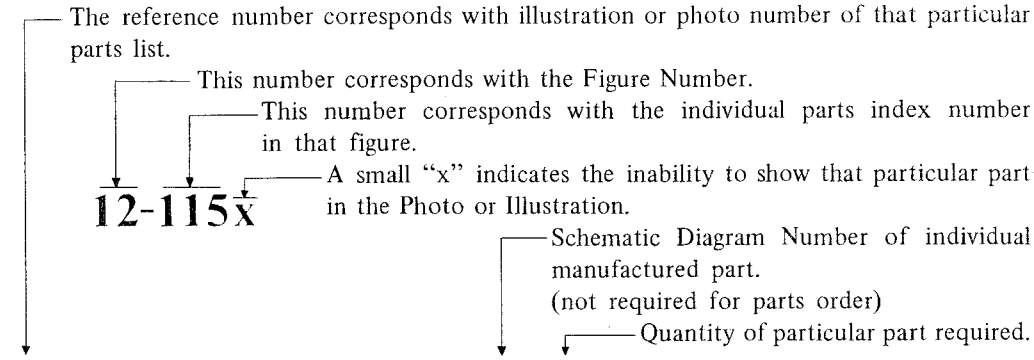
Some of the parts in this parts list are only available as a complete assembly, and can not be supplied as individual parts.

HOW TO USE THIS PARTS LIST

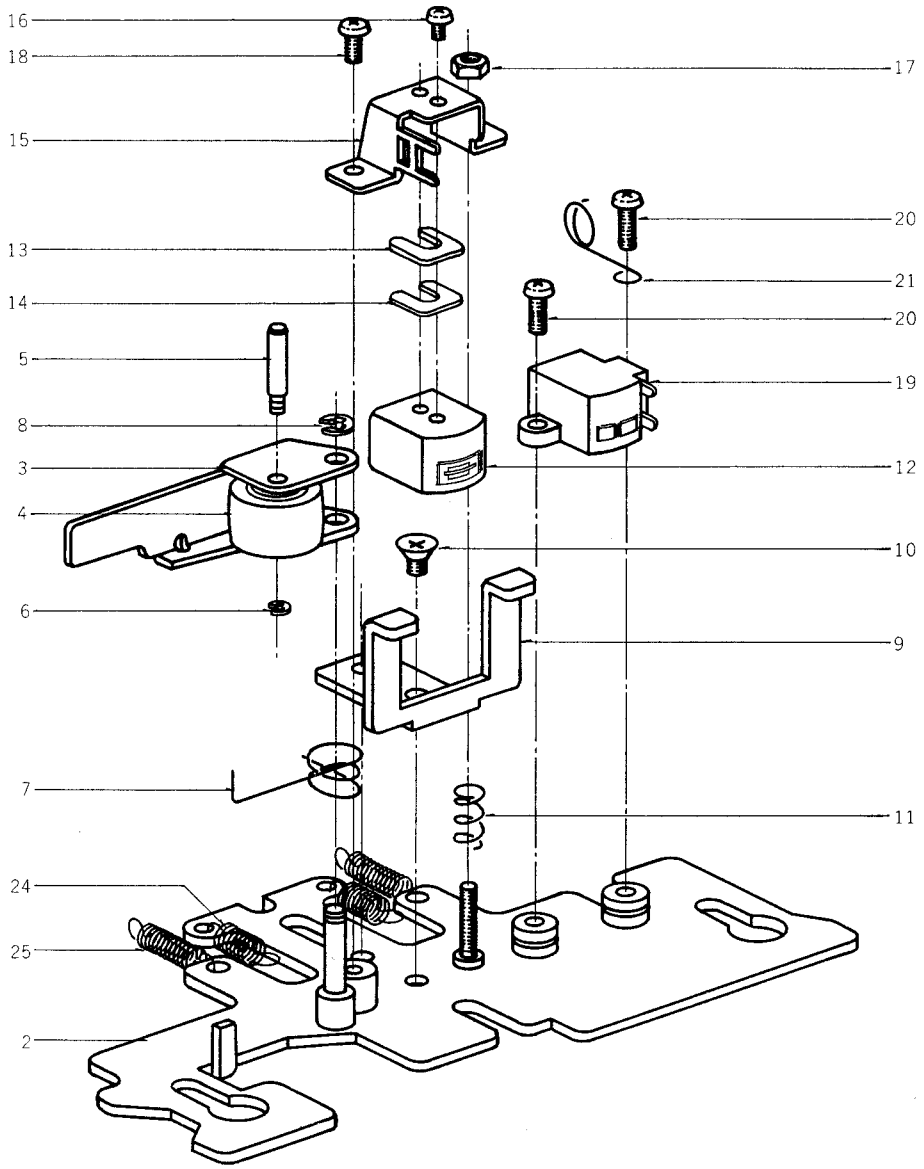
1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List


The reference number corresponds with illustration or photo number of that particular parts list.
This number corresponds with the Figure Number.
This number corresponds with the individual parts index number in that figure.
A small "x" indicates the inability to show that particular part in the Photo or Illustration.
12-115x
Schematic Diagram Number of individual manufactured part.
(not required for parts order)
Quantity of particular part required.

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		FLYWHEEL BLOCK #13		
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13	1
12-116	244506	Flywheel Only	RD-233	1
12-117x	244754	Felt, Flywheel	RD-275	1
12-118	251324	Main Metal Case	RD-236	1
12-119	253080	Main Metal	RD-237	1

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

1 ILLUSTRATION OF HEAD BLOCK

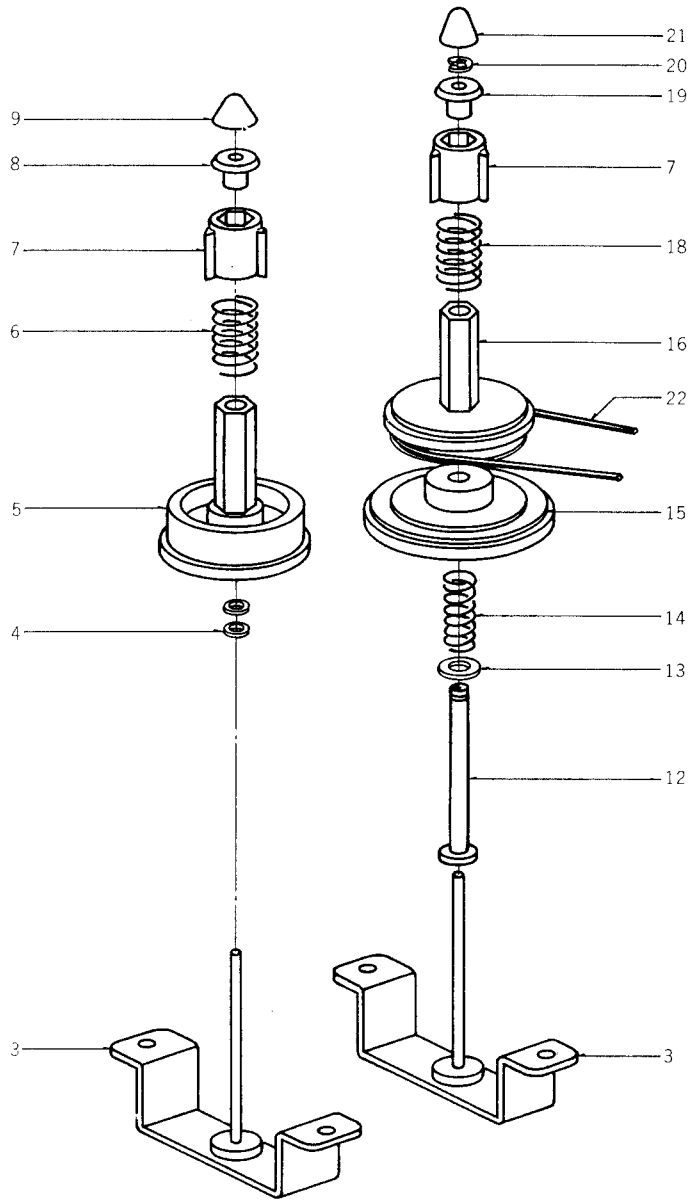


1) HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
1-1x	BH634713	Head Base Block Comp.	CJ	1
1-2	HZ629188	Head Base	CJ-0001	1
1-3	HL457391	Pinch Roller Arm	CG-0010	1
1-4	MP468292	Pinch Roller CG D=13	CG-0032	1
1-5	MS389981	Pinch Roller Shaft	CS-0011	1
1-6	ZW391397	'E' Ring 1.2M	6-1-9	1
1-7	ZG457380	Pinch Roller Spring	CG-0009	1
1-8	ZW270088	'E' Ring 1.9M	6-1-9	1
1-9	TC630731	Cassette Stop Table	CJ-0002	1
1-10	ZS444330	ISO Screw, countersunk head 3x4		2
1-11	ZG402895	CS Angle Adjust Spring	CS-0024	1
1-12	HR589781	REC./PB. HEAD P4-303		1
1-13	ZW414235	Height Adjust Washer A	CS-0025	1
1-14	ZW414246	Height Adjust Washer B	CS-0025	1
1-15	MS366625	PC Tape Guide	RC-1012	1
1-16	ZS477876	Screw, pan head 2x3		1
1-17	ZW273688	Nut M2.3		1
1-18	ZS417161	Screw, pan head 2.3x4		1
1-19	HF656098	ERASE HEAD HF213853	37-22	1
1-20	ZS590804	Screw, pan head 2.3x6		2
1-21	TC399071	Head Wiring Hook	CS-021	1
1-22x	ZW316800	Earth Lug M2.6		1
1-23x	ZS201407	Screw, pan head 2.3x3		1
1-24	ZG629627	Head Compression Spring	CJ-142	2
1-25	ZG392848	Operation Lever Spring	CS-102	2

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

2 ILLUSTRATION OF REEL TABLE BLOCK

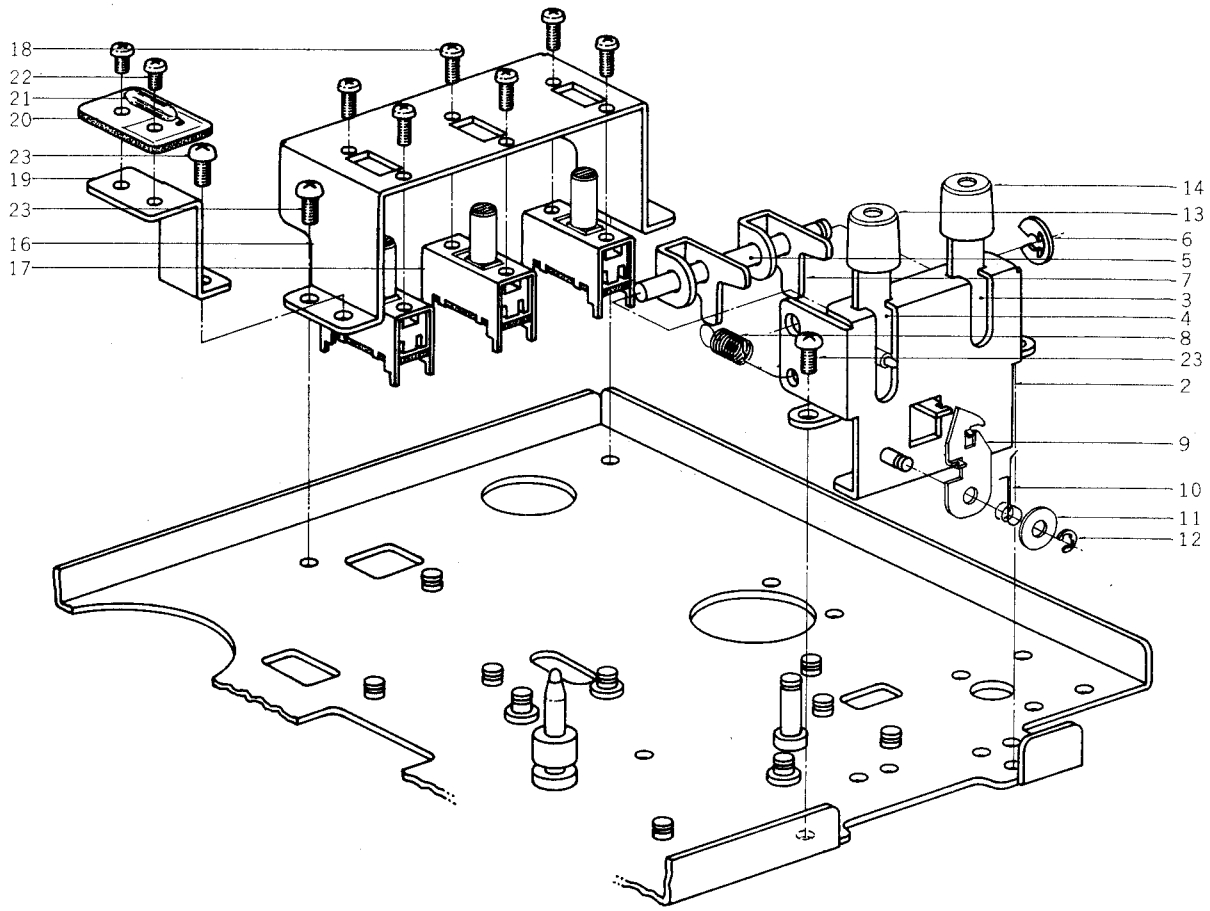


2) REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
2-1x	BR451697	Supply Reel Table Block Comp.	CG,CT,CJ	1
2-2x	BR451686	Take-up Reel Table Block Comp.	CG,CT,CJ	1
2-3	MT457312	Reel Table Bracket	CG-2001	1
2-4	ZW364342	Washer (Polyslider) D1.7x3.2x0.25t		2
2-5	TC389790	Supply Reel Table Comp.	CS-2016B	1
2-6	ZG385075	Reel Table Spring	CS-2014	1
2-7	MT370361	C Type Reel Table Blade	RCC-1345	2
2-8	MT370348	C Type Reel Table Bush	RCC-1343	1
2-9	MT370372	C Type Reel Shaft Cap	RCC-1346	1
2-10x	ZW601751	Washer D6.1x10x0.12t		1
2-11x	ZW601762	Washer D3.1x8x0.12t		1
2-12	MS387573	Take-up Reel Table Shaft	CS-2007	1
2-13	ZW355307	Washer (BSP) D2.6x6.9x0.5t		1
2-14	ZG387584	Clutch Spring	CS-2008	1
2-15	MR387606	Take-up Reel Table Pulley Comp.	CS-2009B	1
2-16	MT387630	Take-up Reel Table Comp.	CS-2012B	1
2-17x	MZ648573	Reel Felt	CW-2017	1
2-18	ZG385075	Reel Table Spring	CS-2014	1
2-19	MT387641	Take-up Reel Table Bush	CS-2015	1
2-20	ZW270088	'E' Ring 1.9M	2-1-9	1
2-21	MT394200	Take-up Reel Cap	CS-2105	1
2-22	MB613258	Counter Belt D=80x1x1	CW-1045	1

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

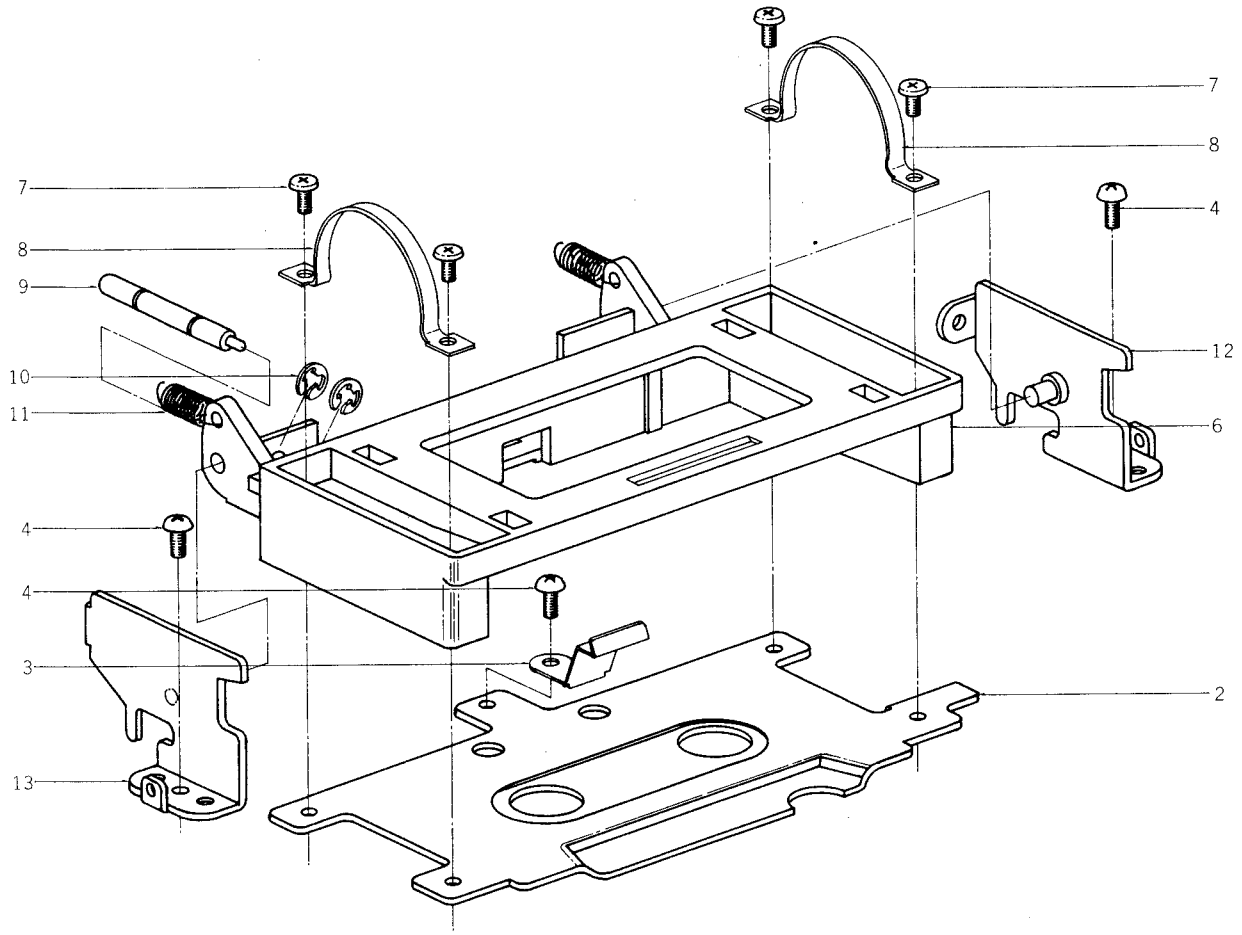
3 ILLUSTRATION OF OPERATION BUTTON/SW. TABLE BLOCK



3) OPERATION BUTTON/SW. TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-1x	**OPERATION BUTTON BLOCK**			
3-1x	BZ634702	Operation Button Block Comp.	CJ	1
3-2	TC630426	Operation Button Holder, w/shaft	CJ-2029	1
3-3	SB457413	Operation Button A	CG-2006	1
3-4	SB461406	Operation Button B, w/lock pin C	CG-2006	1
3-5	MS630437	Button Shaft	CJ-2030	1
3-6	ZW290283	'U' Ring 2.85M	6-1-1	3
3-7	ML457424	Button Lever	CG-2005	2
3-8	ZG639720	Pause Lever Spring	CJ-1047	1
3-9	TC515575	SW. Lock Cam B	CG-2301	1
3-10	ZG514440	Button Lock Spring B	CG-2303	1
3-11	ZW624881	Washer D3x18x0.5t		1
3-12	ZW270088	'E' Ring 1.9M	6-1-9	1
3-13	SK625893	Push Button Knob B	EG-600	1
3-14	SK625882	Push Button Knob C	EG-600	1
	SW. TABLE BLOCK			
3-15x	BZ634724	SW. Table Block Comp.	CJ	1
3-16	MZ630415	SW. Table	CJ-202	1
3-17	ES629763	Slide SW. J-S6002	25-3-11	3
3-18	ZS608220	Screw, pan head 2.6x6		6
3-19	MZ638842	Dolby Lamp Table	CJ-501	1
3-20	EA457176	Lamp P.C. Board	CG-500	1
3-21	EL295312	Lamp (No. 2) 8V 0.2A	28-2-8	1
3-22	ZS417161	Screw, pan head 2.3x4		2
3-23	ZS325495	Tapping Screw #2 3x6		1

4 ILLUSTRATION OF CASSETTE BASE BLOCK

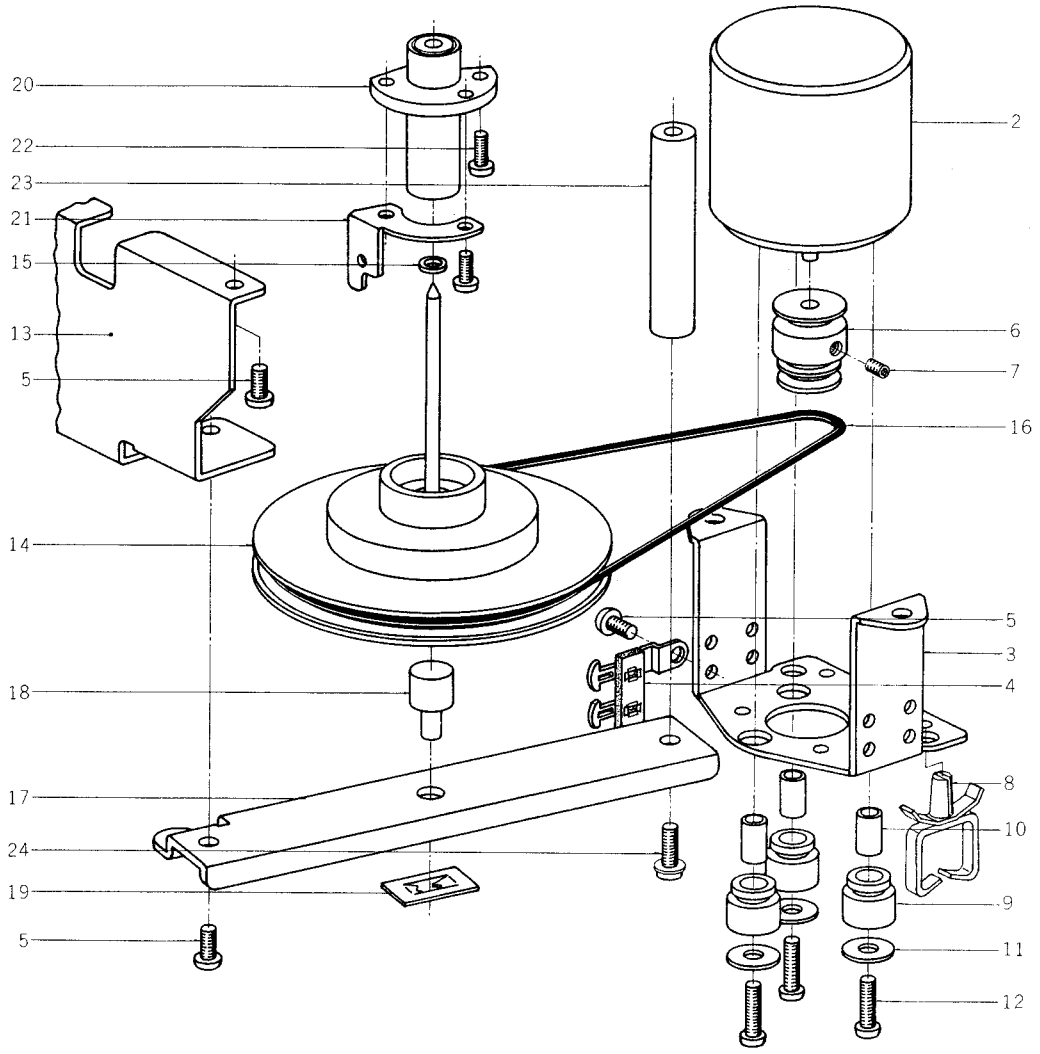


4) CASSETTE BASE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
4-1x	BZ634735	Cassette Base Block Comp.	CJ	1
4-2	TC629651	Cassette Base	CJ-2034	1
4-3	ZG457244	Cassette Retaining Spring	CG-1074	1
4-4	ZS325495	Tapping Screw #2 3×6		3
4-5x	SM477358	Cassette Insert Name Plate	CG-1098	1
4-6	TC629662	Cassette Holder	CJ-2035	1
4-7	ZS422076	Screw, pan head 3×5		4
4-8	SZ630472	Lid Cover Support	CJ-2036	1
4-9	MH457255	REC. Safety Pin	CG-1075	1
4-10	ZW270101	'E' Ring 3M	6-1-9	2
4-11	ZG629616	Cassette Base Spring	CJ-1041	2
4-12	MZ630832	Cassette Table Angle A, w/pin	CJ-1030	1
4-13	MZ630843	Cassette Table Angle B, w/pin	CJ-1030	1
4-14x	TC629605	Cassette Base Support A	CJ-1040	2

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

5 ILLUSTRATION OF MOTOR BLOCK

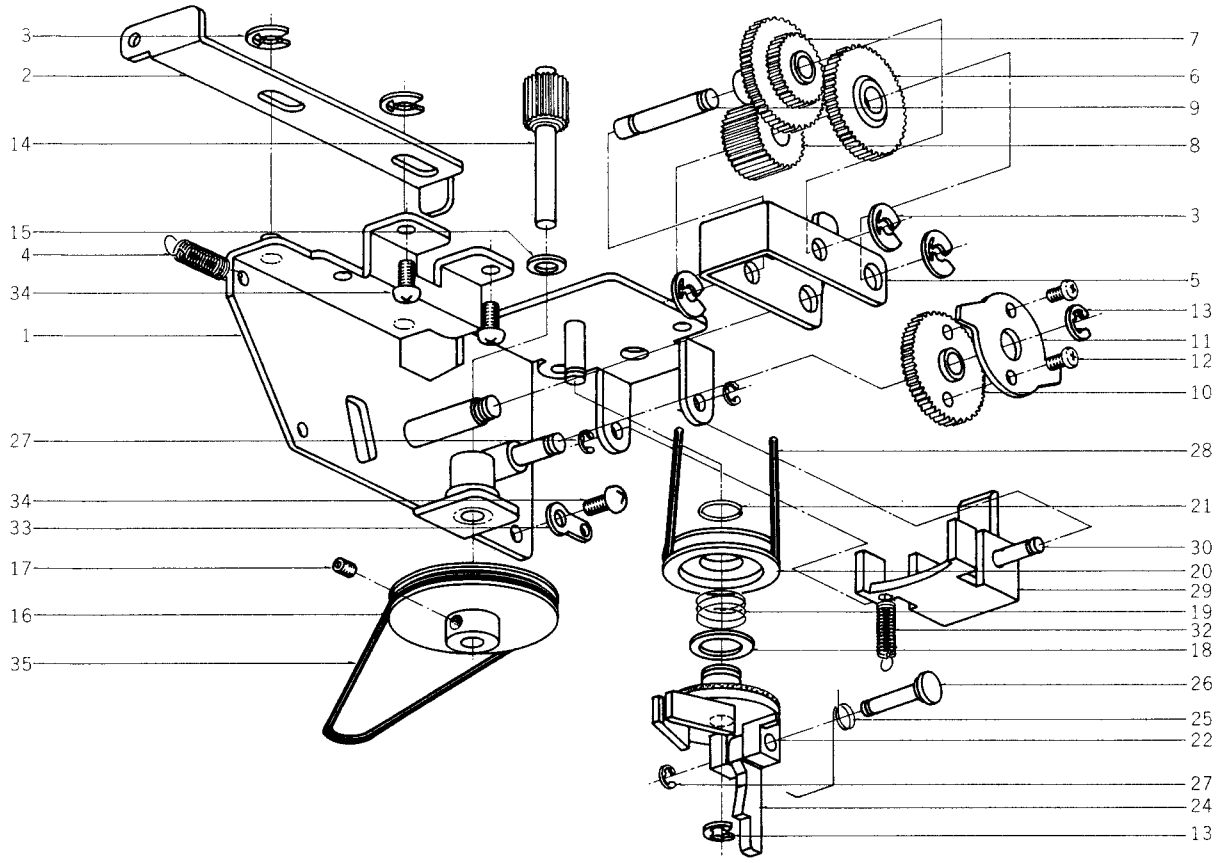


5) MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
5-1x	BM634678	Motor Block Comp.	CJ	1
5-2	BM629752	DC Motor MHT-5PS	9-2-6	1
5-3	MZ629537	Motor Retaining Base	CJ-7001	1
5-4	EJ255082	Lug Plate VBL2	33-4-10	1
5-5	ZS325495	Tapping Screw #2 3x6		5
5-6	MR629695	Motor Pulley	CJ-7002	1
5-7	ZS624870	Set Screw, hexagon socket 2x4 (cup/p.)		2
5-8	EJ496686	Wire Clip 220-JD486010-119	2-7-16	2
5-9	MZ654838	Motor Cushion	CJ-7004	3
5-10	MZ655176	Sleeve	CJ-7003	3
5-11	ZW556828	Washer D3.5x10x0.5t		3
5-12	ZS659046	Screw, pan head 2.6x10		3
5-13	MZ630797	Flywheel Table	CJ-1026	1
5-14	MI638831	Flywheel CJ, w/shaft	CJ-1043	1
5-15	ZW461272	Washer (Polyslider) D3x5x0.13t		1
5-16	MB629548	Capstan Belt D=93.4x1.4x1.4	CJ-1034	1
5-17	TC456682	Capstan Supporting Plate	CG-1021	1
5-18	TC387268	Flywheel Support	CS-1111	1
5-19	ZW478991	Speed Nut M4 (P Type)	6-3-7	1
5-20	MV610514	Capstan Metal Case B, w/metal	CP-1151	1
5-21	TC494987	Take-up Spring Hook	CG-1101	1
5-22	ZS590804	Screw, pan head 2.3x6		3
5-23	MH456671	Capstan Supporting Prop.	CG-1011	1
5-24	ZS369900	Screw, pan head 3x8, w/washer		1

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

6 ILLUSTRATION OF AUTO STOP BLOCK

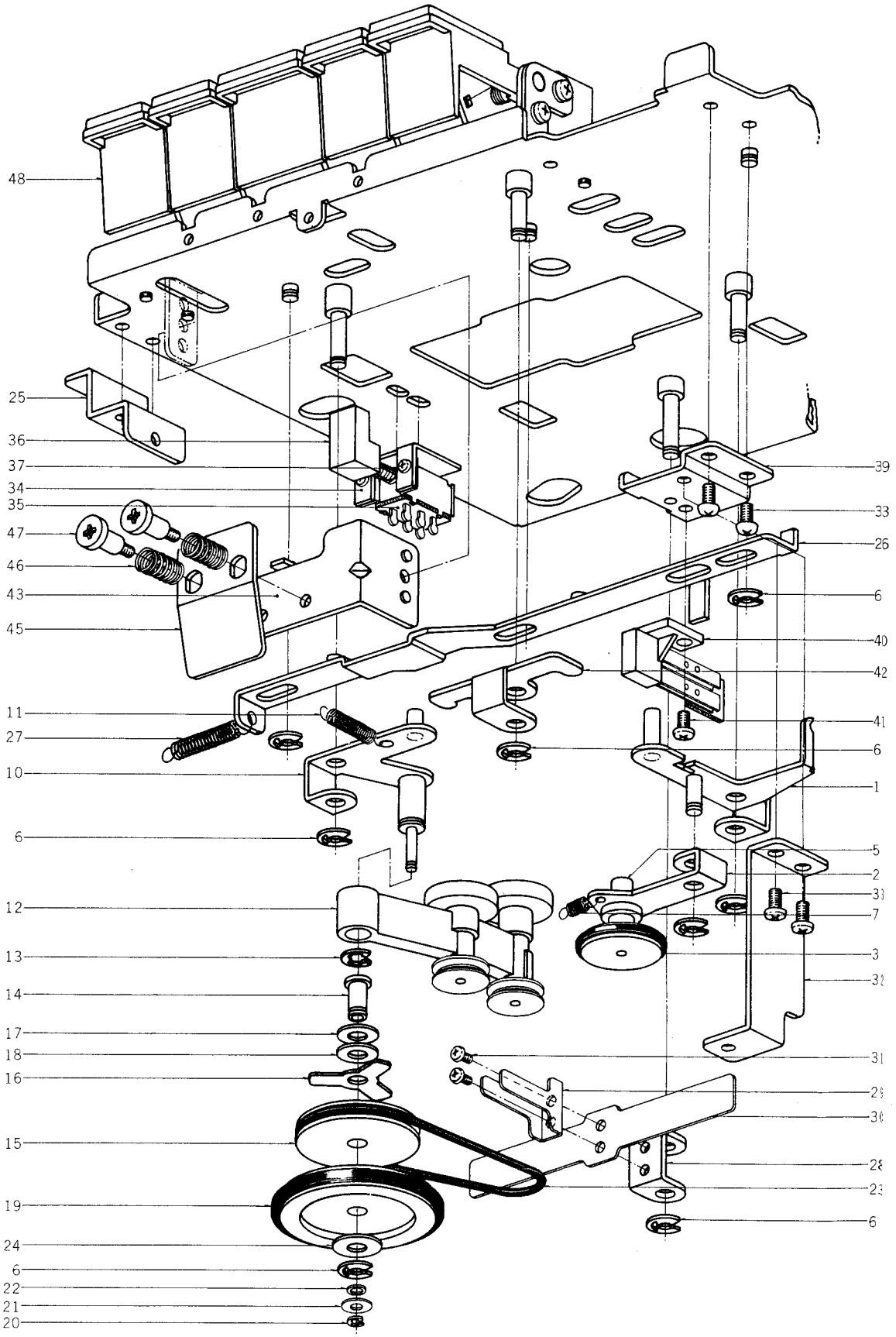


6) AUTO STOP BLOCK

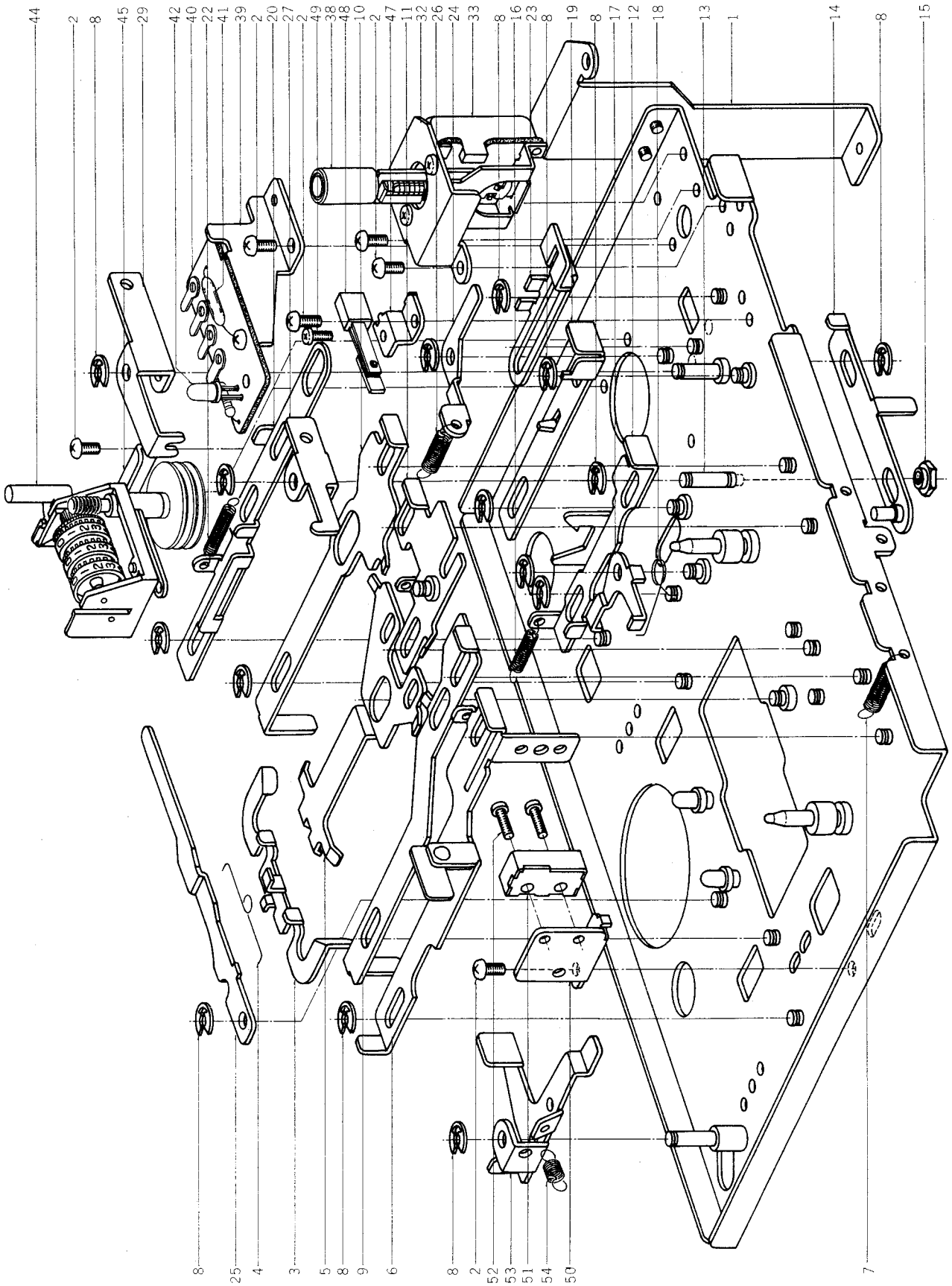
Ref. No.	Parts No.	Description	Schematic No.	Q'ty
6-1	TC629640	Auto Stop Table, w/shaft	CJ-2001	1
6-2	TC630191	Stop Slider	CJ-2005	1
6-3	ZW290283	'U' Ring 2.85M	6-1-1	5
6-4	ZG385323	Eject Safety Spring	CS-1025	1
6-5	MZ630292	Gear Bracket	CJ-2016	1
6-6	MZ630246	Gear B	CJ-2010	1
6-7	MZ630257	Gear C	CJ-2011	1
6-8	MZ630268	Gear D	CJ-2012	1
6-9	MS630281	Gear C Shaft	CJ-2015	1
6-10	MZ630235	Gear A	CJ-2009	1
6-11	TC630270	Stopper Plate	CJ-2013	1
6-12	ZS417161	Screw, pan head 2.3x4		2
6-13	ZW270101	'E' Ring 3M	6-1-9	2
6-14	MZ630202	Worm Gear, w/shaft	CJ-2006	1
6-15	ZW414145	Washer D4.1x7x0.13t		1
6-16	MR630224	Driving Pulley	CJ-2008	1
6-17	ZS434160	Set Screw, hexagon Socket 3x3 (cup/p.)		1
6-18	ZW260278	Washer (Nylon) D8.1x13x0.5t		1
6-19	ZG630347	Clutch Spring	CJ-2021	1
6-20	MR630336	Clutch Pulley	CJ-2020	1
6-21	ZW630358	Retaining Ring	CJ-2022	1
6-22	MZ630303	Detector Cam	CJ-2017	1
6-23x	MZ630325	Clutch Felt	CJ-2019	1
6-24	ML630314	Detector Lever	CJ-2018	1
6-25	ZG630382	Cam Compression Spring	CJ-2025	1
6-26	MS630393	Cam Shaft	CJ-2026	1
6-27	ZW270088	'E' Ring 1.9M	6-1-9	3
6-28	MB630404	Detector Belt D=50.5x1x1	CJ-2027	1
6-29	ML630360	Release Lever	CJ-2023	1
6-30	MS630371	Release Lever Shaft	CJ-2024	1
6-31x	MZ630483	Detector Lever Cushion	CJ-2037	2
6-32	ZG394378	Return Spring	CS-2106	1
6-33	ZW562476	Earth Lug M3		1
6-34	ZS325495	Tapping Screw #2 3x6		1
6-35	MB629561	Reduction Belt D=62x1.4x1.4	CJ-1036	1

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

7 ILLUSTRATION OF MECH. FRAME BLOCK (1)



8 ILLUSTRATION OF MECH. FRAME BLOCK (2)



7) MECH. FRAME BLOCK (1)

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		TAKE-UP LEVER BLOCK		
7-1	ML456693	Take-up Lever (1), w/pin	CG-1024	1
7-2	ML630448	Take-up Lever (2), w/metal	CJ-2031	1
7-3	MI456750	Take-up Wheel, w/shaft	CG-1031	1
7-4x	ZW474581	Washer (Teflon) D2.05x3.5x0.2t		1
7-5	MR456761	Take-up Pulley	CG-1032	1
7-6	ZW290283	'U' Ring 2.85M	6-1-1	8
7-7	ZG469315	Take-up Lever Spring	CG-1091	1
7-8x	ZW461248	Washer (PBP) D4.3x11x0.35t		1
7-9x	ZW530504	Oil Cut Washer	CG-1102	1
		WIND IDLER BLOCK		
7-10	ML456783	Wind Lever (1), w/shaft	CG-2009	1
7-11	ZG392804	Auto. Change Lever E Return Spring	CS-2566	1
7-12	BZ592154	Wind Pulley Block Comp.	CG,CT,CJ	1
7-13	ZW270123	'E' Ring 4M	6-1-9	1
7-14	TC461878	Wheel Collar	CG-2026	1
7-15	MI461891	Wind Wheel (2)	CT-2024	1
7-16	ZG459224	Clutch Spring	CG-2021	1
7-17	ZW259795	Washer (SUP) D4.3x11x0.13t		1
7-18	ZW421007	Washer (SUP) D4.3x11x0.25t		1
7-19	MI638820	Wind Wheel	CJ-2039	1
7-20	ZW391397	'E' Ring 1.2M	6-1-9	1
7-21	ZW474581	Washer (Teflon) D2.05x3.5x0.2t		1
7-22	ZW474592	Washer (Teflon) D2.05x7x0.2t		1
7-23	MB456895	Wind Belt D40x1.4x1.4	CG-1035	1
7-24	ZW474603	Washer (Teflon) D4.1x13x0.2t		1
		MECH. FRAME BLOCK		
7-25	MZ630753	Mech. Frame Base	CJ-1022	2
7-26	MZ631271	Wind Slide, w/pin	CJ-1033	1
7-27	ZG639718	Wind Pull Spring	CJ-1049	1
7-28	MZ595675	Wind Plate	CH-1049	1
7-29	ZG456985	Wind Spring	CG-1045	1
7-30	ZG460484	Wind Plate Spring	CG-1083	1
7-31	ZS417161	Screw, pan head 2.3x4		2
7-32	MZ645287	Warp Stopper Angle	CJ-1053	1
7-33	ZS325495	Tapping Screw #2 3x6		4
7-34	TC498892	SW. Holder	CG-3304	1
7-35	ES539043	Push SW. SPJ-10108	25-5-92	1
7-36	SB499195	SW. Button	CG-3305	1
7-37	ZS460440	Screw, pan head 2x4		2
7-38x	ZS467526	Screw, truss head 2.6x5		2
7-39	EZ630764	Leaf SW. Table	CJ-1023	1
7-40	ES630494	Leaf SW. BSW-53	25-10-22	1
7-41	ZW422076	Screw, pan head 3x5		5
7-42	MZ630810	Eject Arm	CJ-1028	1
7-43	MZ630628	REC. Bracket	CJ-1006	1
7-44x	HZ372161	Hollow Rivet 3x4.5		1
7-45	ZG655817	REC Spring C	CG-1052	1
7-46	ZG494381	REC. Cramp Spring B	CG-1218	2
7-47	ZS478697	Graduated Screw, CG	CG-1093	2
7-48	BK620583	Keyboard SW. CW	CW-3003	1

8) MECH. FRAME BLOCK (2)

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
8-1	MZ630854	Panel Table A	CJ-1032	1
8-2	ZS325495	Tapping Screw #2 3x6		15
8-3	TC456928	Brake Shoe	CG-1039	1
8-4	ZG456930	Brake Spring	CG-1040	1
8-5	TC613236	Brake Slide	CW-1043	1
8-6	MZ630696	Rec. Slide	CJ-1005	1
8-7	ZG456186	Lock Lever Spring	CC-1119	1
8-8	ZW290283	'U' Ring 2.85M	6-1-1	23
8-9	MZ630630	Rewind Slide	CJ-1007	1
8-10	MZ630652	F.F. Slide	CJ-1009	1
8-11	MZ630631	Play Slide, w/pin	CJ-1008	1
8-12	MZ630584	Eject Slide	CJ-1010	1
8-13	MS630573	Shaft A	CJ-1017	1
8-14	MZ630562	Slider A, w/pin	CJ-1016	1
8-15	MZ630527	Slide Collar	CJ-1019	1
8-16	ZG542204	Spring A	CZ-1010	1
8-17	ML630595	Safety Lever	CJ-1011	1
8-18	ZG630606	Safety Lever Return Spring	CJ-1012	1
8-19	MZ630617	Pause Slide B	CJ-1013	1
8-20	TC630742	Slider B	CJ-1021	1
8-21x	ZW270101	'E' Ring 3M	6-1-9	1
8-22	ZG366794	Cassette Return Spring	RCC-1212	1
8-23	MZ630551	Eject Slide B	CJ-1015	1
8-24	ML630538	Connection Lever A	CJ-1020	1
8-25	ML630540	Stop Release Lever	CJ-1014	1
8-26	ZG392826	REC. Lever B Return Spring	CS-1147	1
8-27	ML457110	Pause Lever	CG-1060	1
8-28x	ZG290384	UN Spring D	1630-108	1
8-29	ML457132	Eject Lever	CG-1062	1
8-30x	TC630011	Release Plate	CJ-1043	1
8-31x	ZS432674	Screw, pan head 3x3		2
8-32	EZ630821	Power SW. Table	CJ-1029	1
8-33	ES469541	Push SW. TV-3 JB52	25-5-60	1
8-34x	ES499972	Push SW. JS-09 (CEE)	25-5-67	1
8-35x	ZS608275	Screw, pan head 3x5, w/washer (CEE)		2
8-36x	ZS422076	Screw, pan head 3x5		2
8-37x	EC551160	Ceramic/C. NB821 YZ 0.01μF(Z) 1.4 kWV	24-5-55	1
8-38	SB614428	Power Button B	A5-5021	1
8-39	EZ629572	Lamp P.C. Board Table	CJ-1037	1
8-40	EA629583	Lamp P.C. Board	CJ-1038	1
8-41	EL295312	Lamp (No. 2) 8V 0.2A	28-2-8	1
8-42	ED522887	Luminous Diode SL-103	45-15-2	1
8-43x	ER324641	Carbon/R. (Insu. Type) RD1/4 1k(J)	35-9-5	1
8-44	MC629730	Counter MP-390-138, w/pulley	9-1-39	1
8-45	MZ630775	Counter Base	CJ-1004	1
8-46x	ZS417216	Screw, pan head 3x4		2
8-47	EZ630808	Leaf SW. Table B	CJ-1017	1
8-48	ES629741	Leaf SW. BSW-31C	25-10-13	1
8-49	ZS590804	Screw, pan head 2.3x6		1
8-50	TC457075	SW. Plate	CG-1066	1
8-51	ES494188	Micro SW. SS-5GL-13	25-1-21	1
8-52	ZS487091	Screw, pan head 2.3x8		2
8-53	ML483906	REC. Safety Lever	CT-1003	1
8-54	ZG387821	Rewind Spring	CS-2003	1

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

9 P.C. BOARDS

(1) PRE-AMP. P.C. BOARD (CW-5214)

BLOCK

Symbol No.	Parts No.	Description	Q'ty
(1)-1	BA634768	Pre-Amp. P.C. Board Comp. (CW-5214)	1
(1)-2	BA637345	Pre-Amp. P.C. Board Comp. (CW-5214) (34)	1
(1)-TR1,2	ET391768	Transistor 2SC458LG (C) (D)	4
(1)-TR3	ET603257	Transistor 2SC1312S (G) (H)	2
(1)-TR4	ET623733	Transistor 2SC1647 (R) (S) (E)	2
(1)-TR5	ET557976	Transistor 2SA628 (E) (F)	2
(1)-TR6	ET663243	Transistor 2SC1312S (G)	2
(1)-TR7	ET623733	Transistor 2SC1647 (R) (S) (E)	2
(1)-TR8	ET603270	FET Transistor 2SK34 (D)	2
(1)-TR9	ET663243	Transistor 2SC1312S (G)	2
(1)-TR10	ET557976	Transistor 2SA628 (E) (F)	2
(1)-TR11to15	ET623733	Transistor 2SC1647 (R) (S) (E)	10
(1)-TR16,17	ET398711	Transistor 2SC945 (Q) (R)	2
(1)-D1	ED619784	Germanium Diode 1N60	2
(1)-D2,3	ED560913	Silicon Diode 1S2473 VE	4
(1)-D4	ED619784	Germanium Diode 1N60	2
(1)-D5,6	ED560913	Silicon Diode 1S2473 VE	4
(1)-D7	ED619784	Germanium Diode 1N60	2
(1)-D8	ED491130	Zener Diode WZ-085	1
(1)-L1	EO620291	Inductor RX-9 36MH (J)	2
(1)-L2	EO624857	Inductor GE6070A 23MH	2
(1)-L3	EO243988	Ferri Inductor FL7H 3.3MH (J)	2
(1)-L4	EO368403	Ferri Inductor FL9H 33MH (J)	2
(1)-VR1	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	2
(1)-VR2	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	2
(1)-VR3	EV522797	Semi-fixed/Vol. V8K4-1 20 kB	2
(1)-VR4	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	2
(1)-VR5	EV648527	Semi-fixed/Vol. V10K8-4-2 B200K	2
(1)-T1	BT620392	Headphone Trans. S14-1235	2
(1)-T2	EO496844	OSC. Coil OT-903	1
(1)-SW1	ES621382	Slide SW. T-864B	2
		Capacitor, Vertical Type	
(1)-C1	EC412593	Styrol 820PF (J) 50WV	2
(1)-C2	EC321208	Elect. 220μF 16WV	2
(1)-C3	EC432810	Elect. 10μF 16WV NL	2
(1)-C4	EC405898	Styrol 470PF (J) 50WV	2
(1)-C5	EC493637	Elect. 47μF 10WV	2
(1)-C6	EC399565	FM 22PF (J) 50WV	2
(1)-C7,8	EC320051	Elect. 10μF 16WV	4
(1)-C9	EC389474	Mylar 0.0015μF (J) 50WV	2
(1)-C10	EC389485	Mylar 0.018μF (J) 50WV	2
(1)-C11	EC220105	Elect. 100μF 10WV	2
(1)-C12	EC313108	Elect. 1μF 50WV	2
(1)-C13	EC379787	Mylar 0.0039μF (J) 50WV	2
(1)-C14	EC495865	Styrol 3000PF (J) 50WV	2
(1)-C15	EC250683	Mylar 0.0022μF (J) 50WV	2
(1)-C16	EC313108	Elect. 1μF 50WV	2
(1)-C17	EC493637	Elect. 47μF 10WV	2
(1)-C18	EC290520	VFM 100PF (J) 50WV	2
(1)-C19	EC320051	Elect. 10μF 16WV	2
(1)-C20	EC313108	Elect. 1μF 50WV	2
(1)-C21	EC350875	Mylar 0.001μF (J) 50WV	2
(1)-C22	EC320051	Elect. 10μF 16WV	2
(1)-C23	EC329883	Mylar 0.0056μF (J) 50WV	2
(1)-C24	EC329861	Mylar 0.027μF (J) 50WV	2
(1)-C25	EC337500	Mylar 0.0047μF (J) 50WV	2
(1)-C26	EC320051	Elect. 10μF 16WV	2
(1)-C27	EC523282	Solid Aluminum 0.1μF (M) 25WV	2
(1)-C28	EC493637	Elect. 47μF 10WV	2
(1)-C29	EC290520	VFM 100PF (J) 50WV	2
(1)-C30	EC320051	Elect. 10μF 16WV	2
(1)-C31,32	EC523282	Solid Aluminum 0.1μF (M) 25WV	4
(1)-C33	EC320051	Elect. 10μF 16WV	2
(1)-C34	EC523282	Solid Aluminum 0.1μF (M) 25WV	2
(1)-C35	EC604102	Solid Aluminum 0.33μF (K) 25WV	2
(1)-C36	EC320040	Elect. 47μF 16WV	2
(1)-C38	EC320051	Elect. 10μF 16WV	2
(1)-C39	EC487157	NP 0.47μF (M) 50WV	2
(1)-C40	EC450527	Elect. 4.7μF 25WV	2
(1)-C41	EC379192	Mylar 0.039μF (J) 50WV	2
(1)-C42	EC493637	Elect. 47μF 10WV	2
(1)-C43to45	EC320051	Elect. 10μF 16WV	6
(1)-C46	EC321208	Elect. 220μF 16WV	1
(1)-C47	EC513955	Styrol 220PF (J) 50WV	2
(1)-C48	EC290520	VFM 100PF (J) 50WV	2
(1)-C49	EC638673	Styrol 3900PF (J) 125WV	1
(1)-C50	EC220432	Elect. 2.2μF 25WV	1
(1)-C51	EC379157	Mylar 0.033μF (J) 50WV	1
(1)-C52	EC250885	Mylar 0.01μF (K) 50WV	2

Carbon Resistor Omitted

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

(2) POWER SUPPLY P.C. BOARD (CJ-5012) (CJ-5026) BLOCK

Symbol No.	Parts No.	Description	Q'ty
		POWER SUPPLY P.C. BOARD (CJ-5012) BLOCK	
(2)-1	BA634871	Power Supply P.C. Board Comp. (CJ-5012)	1
(2)-2	BA657191	Power Supply P.C. Board Comp. (CJ-5012) (34)	1
(2)-3	BA657202	Power Supply P.C. Board Comp. (CJ-5012) (CEE)	1
(2)-4	BA657213	Power Supply P.C. Board Comp. (CJ-5012) (CSA)	1
(2)-5	BA657224	Power Supply P.C. Board Comp. (CJ-5012) (JPN)	1
(2)-6	BA660958	Power Supply P.C. Board Comp. (CJ-5012) (34-CSA)	1
(2)-TR1,2	ET453611	Transistor 2SC1096 (L) (K) (Z Type)	2
(2)-D1to8	ED511097	Silicon Diode 1N4001	8
(2)-D9	ED629785	Zener Diode WZ-135	1
(2)-D10	ED498150	Zener Diode WZ-192	1
(2)-F1	EF592075	Fuse 0.3A 250V	1
(2)-F1	EF563670	Fuse 0.5A 250V (34)	1
(2)-7	EZ630101	Heat-sink Plate	1
(2)-8	ZS421806	Screw, pan head 3x8	2
(2)-9	ZW273756	Nut M3	2
(2)-10	EJ514822	Fuse Holder, P.C. Board S-N5051	2
		Capacitor, Vertical Type	
(2)-C1	EC444082	Elect. 470μF 35WV	1
(2)-C2	EC220151	Elect. 100μF 25WV	1
(2)-C3	EC220127	Elect. 100μF 16WV	1
(2)-C4	EC444082	Elect. 470μF 35WV	1
(2)-C5,6	EC220151	Elect. 100μF 25WV	2
		POWER SUPPLY P.C. BOARD (2) (CJ-5026) BLOCK	
(2)-11	BA637391	Power Supply P.C. Board (2) Comp. (CJ-5026) (34)	1
(2)-D1to4	ED494583	Silicon Diode 10D05	1
(2)-12	TC647504	P.C. Board Angle	1
(2)-13	ZS417216	Screw, pan head 3x4	2
(2)-C1,2	EC450270	Elect./C. 1000μF 25WV (Vert. Type)	2

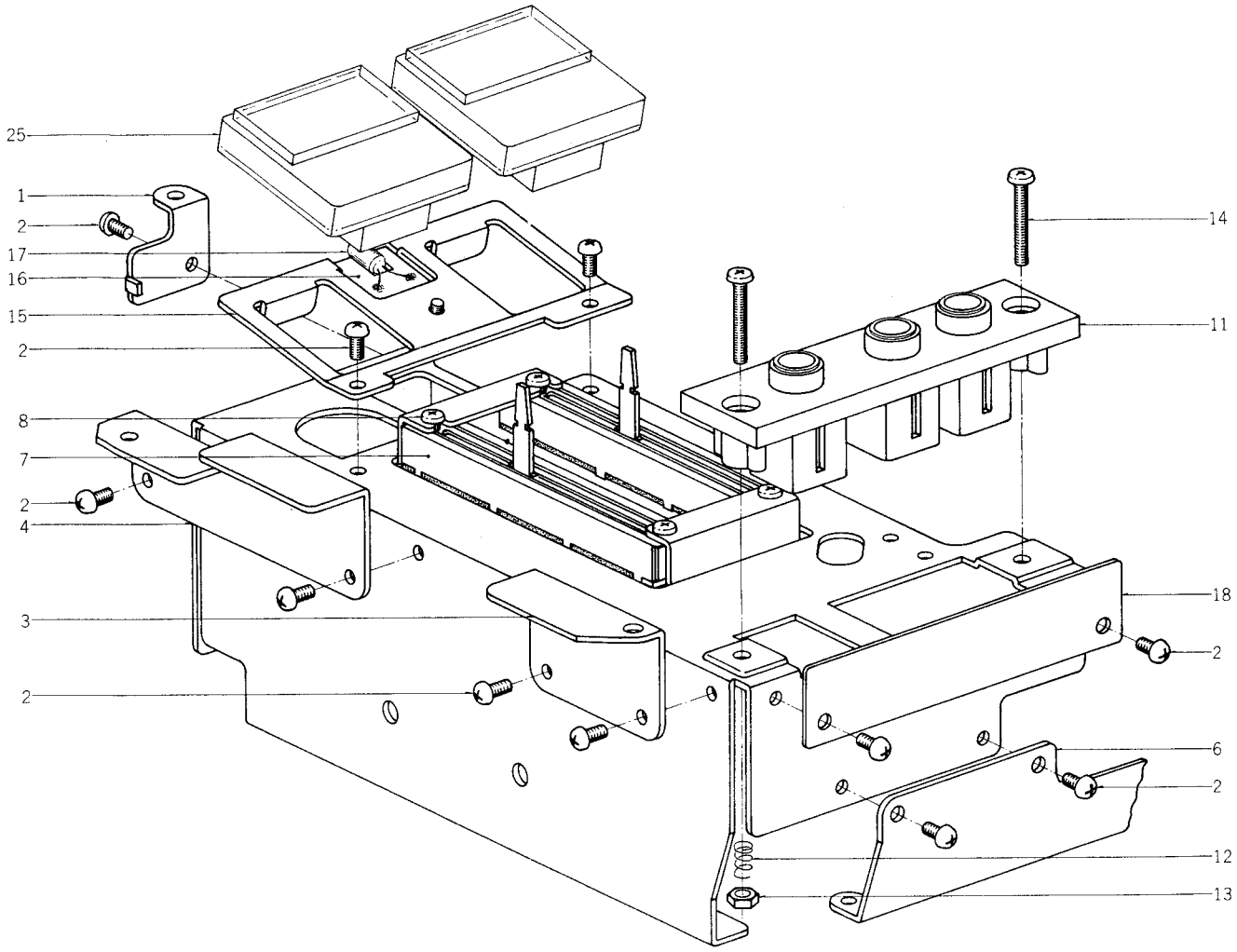
Carbon Resistor Omitted

(3) MAIN AMP. P.C. BOARD (CJ-5023) BLOCK

Symbol No.	Parts No.	Description	Q'ty
(3)-1	BA637402	Main Amp. P.C. Board Comp.	1
(3)-2	EZ647460	Heat-sink Plate	1
(3)-3	EI517342	I.C., Power Amp. LA-4032P	2
(3)-4	ZS380046	ISO Screw, pan head 3x10	4
(3)-5	TC647515	I.C. Mt. Metal Parts	1
(3)-6	EZ647471	Amp. Shield	1
(3)-7	ZS417216	Screw, pan head 3x4	3
(3)-8	ZW273756	Nut M3	4
		Capacitor, Vertical Type	
(3)-C1	EC250885	Mylar 0.01μF (K) 50WV	2
(3)-C2	EC320051	Elect. 10μF 16WV	2
(3)-C3	EC321208	Elect. 220μF 16WV	2
(3)-C4	EC450066	Elect. 33μF 16WV	2
(3)-C5	EC362158	Mylar 0.0047μF (K) 50WV	2
(3)-C6	EC250661	Mylar 0.0015μF (K) 50WV	2
(3)-C7	EC220151	Elect. 100μF 25WV	1
(3)-C8	EC339096	Elect. 470μF 16WV	2
(3)-C9	EC515834	Styrol 560PF (K) 50WV	2

Carbon Resistor Omitted

10 ILLUSTRATION OF AMP. CHASSIS BLOCK

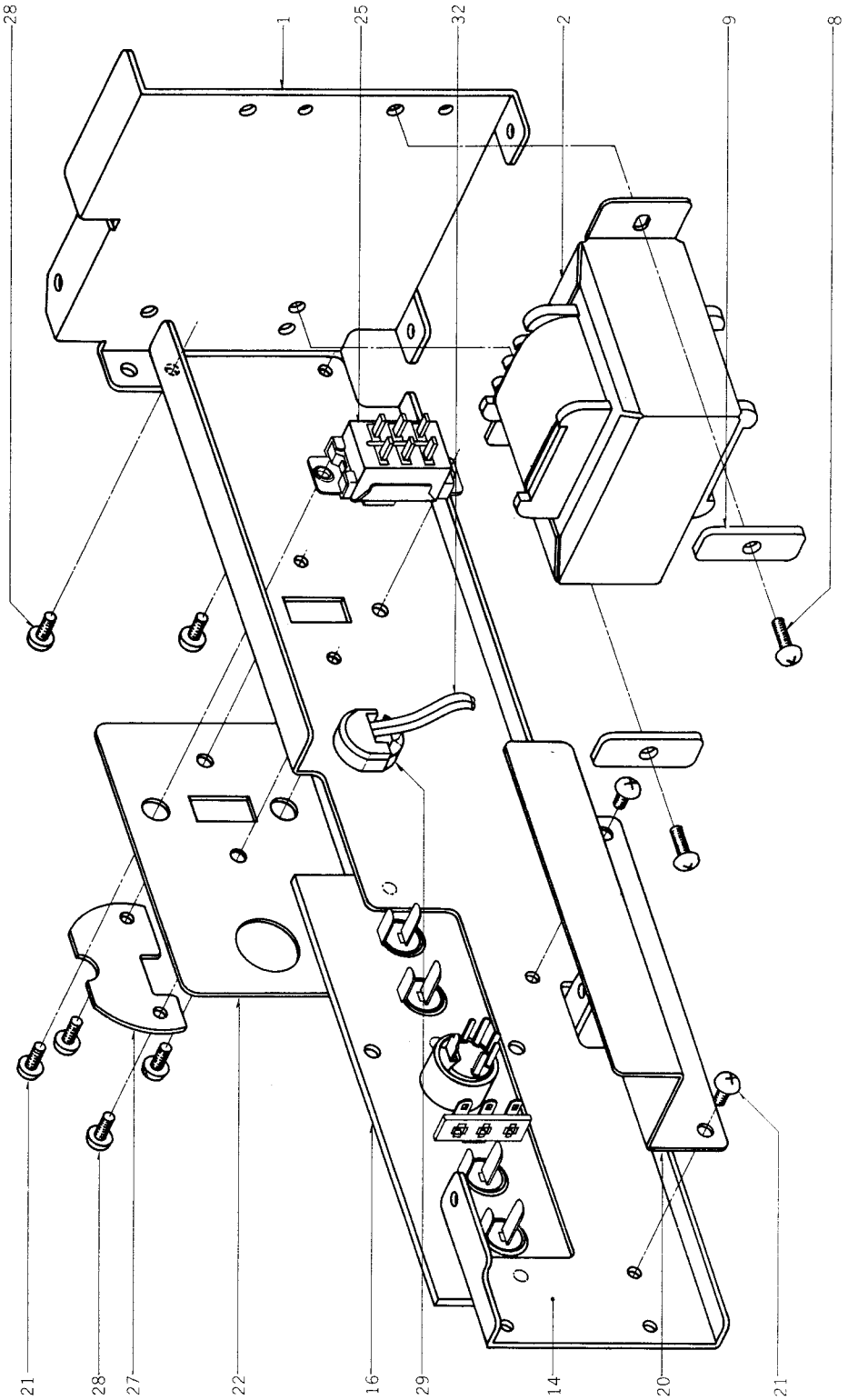


10) AMP. CHASSIS BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
10-1	TC630033	Meter Panel Table B	CJ-5004	1
10-2	ZS325495	Tapping Screw #2 3x6		12
10-3	TC630044	Panel Table B	CJ-5005	1
10-4	TC630055	Panel Table C	CJ-5006	1
10-5x	TC647493	Panel Table (34)	CJ-5019	1
10-6	EZ630066	P.C. Board Table	CJ-5007	1
10-7	EV635207	Slide Vol. VJ608N20D-15A50K	36-16-8	2
10-8	ZS417216	Screw, pan head 3x4		4
10-9x	EV469866	Co-axial 2-throw/Vol. GM10A 100 kBx2 (34)	36-22-11	1
10-10x	EZ647482	Volume Shield (34)	CJ-5018	1
10-11	EJ555794	Jack, 3-throw S-G0911	31-2-43	1
10-12x	ZG252628	Meter Spring (Large)	100541	2
10-13	ZW273756	Nut M3		2
10-14	ZS608253	Screw, pan head 3x20		2
10-15	TC630022	Meter Table	CJ-5002	1
10-16	TC612112	Lamp Plate (1)	CH-5302	1
10-17	EL621167	Pilot Lamp 5.5V 60MA	28-2-36	1
10-18	EZ633036	Mic Jack Shield	CJ-5014	1
10-19x	SE631618	Mask D	CG-6816	2
10-20x	EJ592435	Mic. Jack 2PMJ4 (34)	31-2-44	2
10-21x	EZ225180	Nylon Collar, Jack (34)	LD-520	2
10-22x	ZW437084	Washer (Fiber) D9.1x15.4x0.5t (34)		2
10-23x	ZW554624	E Jack Nut (34)	7-1-56	2
10-24x	SM647526	Jack Name Plate (34)	CJ-6029	1
10-25	EM630505	VU Meter D33C59R	46-1-98	2

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

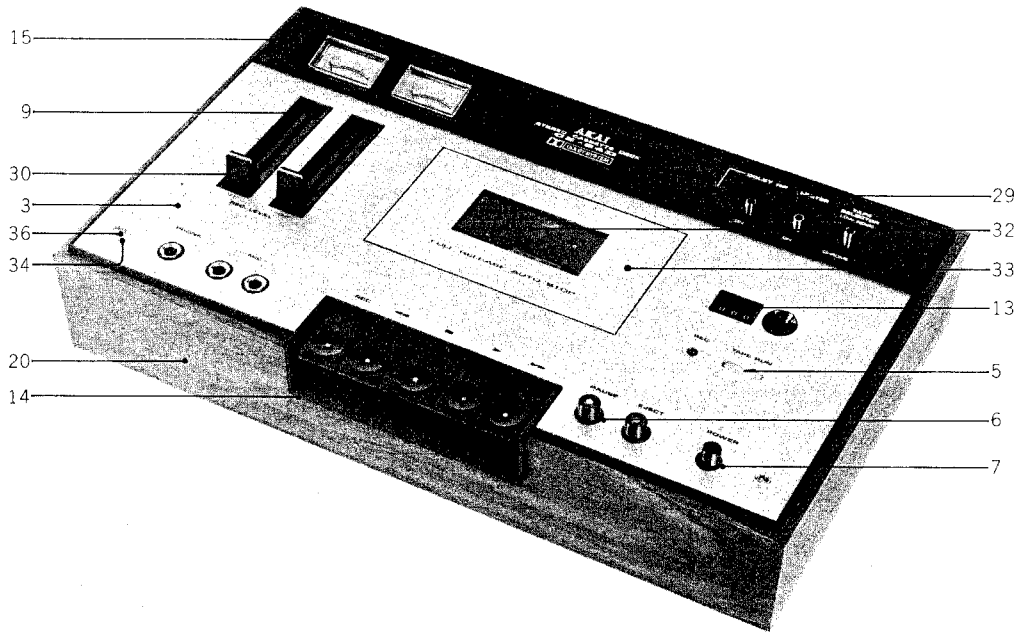
11 ILLUSTRATION OF AMP. ASSEMBLY BLOCK



11) AMP. ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		POWER SUPPLY TRANS. TABLE BLOCK		
11-1	EZ630077	Power Trans. Table	CJ-5008	1
11-2	BT629774	Power Trans. CJT-1	38-4-319	1
11-3x	BT629807	Power Trans. CJT-12 (CSA)	38-4-325	1
11-4x	BT629796	Power Trans. CJT-11 (JPN)	38-4-324	1
11-5x	BT629818	Power Trans. CJT-13 (CEE)	38-4-326	1
11-6x	BT645557	Power Trans. CJT-2 (34, 34-3 core)	38-4-351	1
11-7x	BT669352	Power Trans. CJT-3 (34-CSA)	38-4-373	1
11-8	ZS447840	Tapping Screw #2 3x8 (BR)		2
11-9	TC516598	Trans. Retainer	CS-5337	2
11-10x	ZW273881	Earth Lug M4 (3 core)		1
11-11x	ZS417150	Screw, pan head 4x6 (3 core)		1
11-12x	ZW273892	Toothed Lock Washer M4 (3 core)		1
11-13x	ZW413188	Nut M4 (3 core)		1
		JACK PLATE TABLE BLOCK		
11-14	EZ630090	Jack Plate Table	CJ-5010	1
11-15x	HZ372161	Hollow Rivet 3x4.5		3
11-16	EJ621191	Jack Plate KJ	31-5-118	1
11-17x	ER498778	Carbon/R. RD1/4 510k (J) (Insu. Type)	35-9-5	2
11-18x	ER315213	Carbon/R. RD1/4 8.2k (J) (Insu. Type)	35-9-5	4
11-19x	ER345712	Carbon/R. RD1/4 22k (J) (Insu. Type)	35-9-5	4
11-20	TC630088	Shield Plate	CJ-5009	1
11-21	ZS455207	Tapping Screw #2 3x5 (BR)		2
11-22	SM629447	Power Name Plate	CJ-6014	1
11-23x	SM629515	Power Name Plate B (CEE, CSA, JPN)	CJ-6021	1
11-24x	SM648393	Power Supply Name Plate C (34, 34-3 core)	CJ-6014	1
11-25	ES479485	Slide SW. S-1	25-3-66	1
11-26x	ZS608488	Screw, pan head 3x5		2
11-27	TC613697	Volt Indication Plate	CW-5018	1
11-28	ZS447761	Tapping Screw #2 3x6 (BR) (Black)		2
11-29	EJ631945	Strain Relief SR-4N-4	2-7-49	1
11-30x	EJ631945	Strain Relief SR-4N-4 (CEE)	2-7-49	1
11-31x	EZ246936	Strain Relief SR-6W-1 (3 core)	2-7-8	1
11-32	EW374894	AC Cord U/L 3M	26-3-19	1
11-33x	EW516600	AC Cord VM-0065 (CEE)	26-3-28	1
11-34x	EW315448	Australia Cord (3 core)	26-3-11	1
11-35x	EW524845	AC Cord 2.5M (JPN)	26-3-31	1
11-36x	EZ629842	Fuse Plate CJ (CEE) (JPN)	CJ-1052	1
11-37x	EZ629638	Fuse Metal Fittings CJ (CEE, CSA, JPN)	CJ-1051	1
11-38x	ZS609197	Tapping Screw 3x6 pan head (CEE, CSA, JPN)		2
11-39x	ZS325495	Tapping Screw #2 3x6 (CEE, CSA, JPN)		1
11-40x	EF238634	Fuse 400MAT (T Type) (CEE)		3
11-41x	EF371698	Fuse ST-4 0.5A (CSA)	39-1-28	3
11-42x	EF591873	Fuse 0.5A 125V (JPN)	39-1-52	3
11-43x	ZW413188	Nut M4 (CEE)		1
11-44x	ZW273881	Earth Lug M4 (CEE)		1
11-45x	ZS201767	Screw, pan head 4x6, w/washer (CEE)		1
11-46x	EA629831	Fuse P.C. Board CJ (CSA)	CJ-1050	1
11-47x	EJ514822	Fuse Holder, P.C. Board S-N5051 (CSA)	40-1-28	6

12 PHOTO OF FINAL ASSEMBLY BLOCK



12) FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		FRONT PANEL BLOCK		
12-1x	BZ634656	Front Panel Block Comp.	CJ	1
12-2x	BZ637312	Front Panel Block Comp. (34)	CJ	1
12-3	SP629728	Front Panel	CJ-600	1
12-4x	SP641362	Front Panel B (34)	CJ-600	1
12-5	SE630123	Tape Run Escutcheon	CJ-600	1
12-6	SE630134	Button Escutcheon D	CJ-600	2
12-7	SE613888	Button Escutcheon A	CW-602	1
12-8x	SE647537	Tone Escutcheon (34)	CJ-603	1
12-9	SE630145	Slide Vol. Escutcheon	CJ-600	1
12-10x	SE629493	Vol. Mask	CJ-601	1
12-11x	EZ633058	Lamp Shield	CJ-602	1
12-12x	TC629471	Cassette Base Support B	CJ-601	1
12-13	SE630156	Counter Escutcheon	CJ-600	1
12-14	SE629684	Keyboard Escutcheon	CJ-600	1
		ASSEMBLY BLOCK		
12-15	SP629706	Meter Panel	CJ-600	1
12-16x	SP641531	Meter Panel B (34)	CJ-600	1
12-17x	TC629458	Meter Panel Table A	CJ-601	1
12-18x	ZS325495	Tapping Screw #2 3x6		9
12-19x	TC629460	Meter Panel Table B	CJ-601	2
12-20	SP629673	Wood Frame	CJ-600	1
12-21x	BC639551	Wood Frame B (34)	CJ-600	1
12-22x	SP630178	Lower Case	CJ-600	1
12-23x	SA484121	Rubber Foot	CT-602	4
12-24x	EZ629482	Pre Amp. Shield	CJ-601	1
12-25x	ZS447840	Tapping Screw #2 3x8 (BR)		6
12-26x	SZ633047	Case Spacer	CJ-602	4
12-27x	SM645568	Rear Name Plate CS-34	CG-651	1
12-28x	EZ633058	Lamp Shield	CJ-602	1
12-29	SE639696	Lamp Lens B-2	NE-600	1
12-30	SK566008	Vol. Knob B	CG-651	2
12-31x	SK647548	Single Knob (Small) (34)	CJ-603	1
12-32	SP629425	Lid Cover	CJ-601	1
12-33	SP629436	Lid Panel	CJ-601	1
12-34	ZW408418	Panel Washer	KD-602	2
12-35x	ZW668880	Panel Screw B (CSA)	CW-603	2
12-36	ZS203084	Screw, oval countersunk head 3x8		2

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

13 LIST OF INTERCHANGEABLE SEMICONDUCTORS

As far as service in concerned, in case the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C. Board	Description	Parts No.
2SC458LG (C) (D)	ET391768	CW-5214	2SC693U (F) 2SC1312S (G) (H)	ET315472 ET603257
2SC1648 (U) (E)	ET634882	CW-5214	2SC1312S (G) (H) 2SC458LG (C) (D) 2SC693U (F)	ET603257 ET391768 ET315472
2SC1647 (R) (S) (E)	ET623733	CW-5214	2SC945 (Q) (R) 2SC711 (E) (F) 2SC536 (E) (F)	ET398711 ET453486 ET370607
2SA628 (E) (F)	ET557976	CW-5214	2SA564 (Q) (R) 2SA733 (Q) (R) 2SA640 (E) (F)	ET538154 ET538378 ET623790
2SK34 (D)	ET603270	CW-5214	2SK30A (GR)	ET491051
2SC945L (Q) (R)	ET635837	CW-5214	2SC945 (Q) (P) 2SC1647 (S) (E)	ET478001 ET592424
2SC1096 (K) (L)	ET536073	CJ-5012	2SD360 (D) (E) 2SD325 (D) (E)	ET517375 ET631855
1N60	ED428264	CW-5214	1N34A	ED417442
1S2473VE	ED560913	CW-5214	1S1588 WG599	ED557447 ED514721
1N4001	ED511097	CJ-5012	10D05	ED494583
WZ085	ED491130	CW-5214	RD6A (M)	ED468303

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
BA634768	(1)-1	EC450270	(2)-C1,2	EV522797	(1)-VR3	MZ630202	6-14	TC613236	8-5
BA634871	(2)-1	EC450527	(1)-C40	EV635207	10-7	MZ630235	6-10	TC613697	11-27
BA637345	(1)-2	EC487157	(1)-C39	EV648527	(1)-VR5	MZ630246	6-6	TC629458	12-17x
BA637391	(2)-11	EC493637	(1)-C5	EW315448	11-34x	MZ630257	6-7	TC629460	12-19x
BA637402	(3)-1	EC493637	(1)-C17	EW374894	11-32	MZ630268	6-8	TC629471	12-12x
BA657191	(2)-2	EC493637	(1)-C28	EW516600	11-33x	MZ630292	6-5	TC629605	4-14x
BA657202	(2)-3	EC493637	(1)-C42	EW524845	11-35x	MZ630303	6-22	TC629640	6-1
BA657213	(2)-4	EC495865	(1)-C14	EZ225180	10-21x	MZ630325	6-23x	TC629651	4-2
BA657224	(2)-5	EC513955	(1)-C47	EZ246936	11-31x	MZ630415	3-16	TC629662	4-6
BA660958	(2)-6	EC515834	(3)-C9	EZ629482	12-24x	MZ630483	6-31x	TC630011	8-30x
BC639551	12-21x	EC523282	(1)-C27	EZ629572	8-39	MZ630527	8-15	TC630022	10-15
BH634713	1-1x	EC523282	(1)-C31,32	EZ629638	11-37x	MZ630551	8-23	TC630033	10-1
BK620583	7-48	EC523282	(1)-C34	EZ629842	11-36x	MZ630562	8-14	TC630044	10-3
BM629752	5-2	EC551160	8-37x	EZ630066	10-6	MZ630584	8-12	TC630055	10-4
BM634678	5-1x	EC604102	(1)-C35	EZ630077	11-1	MZ630617	8-19	TC630088	11-20
BR451686	2-2x	EC638673	(1)-C49	EZ630090	11-14	MZ630628	7-43	TC630191	6-2
BR451697	2-1x	ED491130	(1)-D8	EZ630101	(2)-7	MZ630630	8-9	TC630270	6-11
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BT629774	11-2	ED498150	(2)-D10	EZ630808	8-47	MZ630652	8-10	TC630731	1-9
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BT629818	11-5x	ED560913	(1)-D2,3	EZ633058	12-11x	MZ630775	8-45	TC647504	(2)-12
BT645557	11-6x	ED560913	(1)-D5,6	EZ633058	12-28x	MZ630797	5-13	TC647515	(3)-5
BT669352	11-7x	ED619784	(1)-D1	EZ647460	(3)-2	MZ630810	7-42	ZG252628	10-12x
BZ592154	7-12	ED619784	(1)-D4	EZ647471	(3)-6	MZ630832	4-12	ZG290384	8-28x
BZ634656	12-1x	ED619784	(1)-D7	EZ647482	10-10x	MZ630843	4-13	ZG366794	8-22
BZ634702	3-1x	ED629785	(2)-D9	HF656098	1-19	MZ630854	8-1	ZG385075	2-6
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EC290520	(2)-C18	EL295312	8-41	MI638831	5-14	SE630145	12-9	ZG469315	7-7
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EC313108	(1)-C20	EO496844	(1)-T2	ML457424	3-7	SK566008	12-30	ZG629627	1-24
EC320040	(1)-C36	EO620291	(1)-L1	ML483906	8-53	SK625882	3-14	ZG630347	6-19
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EC379787	(1)-C13	ET603270	(1)-TR8	MT370348	2-8	TC399071	1-21	ZS417161	1-18
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EC412593	(1)-C1	ET663243	(1)-TR9	MT394200	2-21	TC494987	5-21	ZS417216	(3)-7
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Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
ZS422076	8-36x	ZS609197	11-38x	ZW290283	3-6	ZW474581	7-4x		
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ZS455207	11-21	ZW270088	3-12	ZW391397	1-6	ZW556828	5-11		
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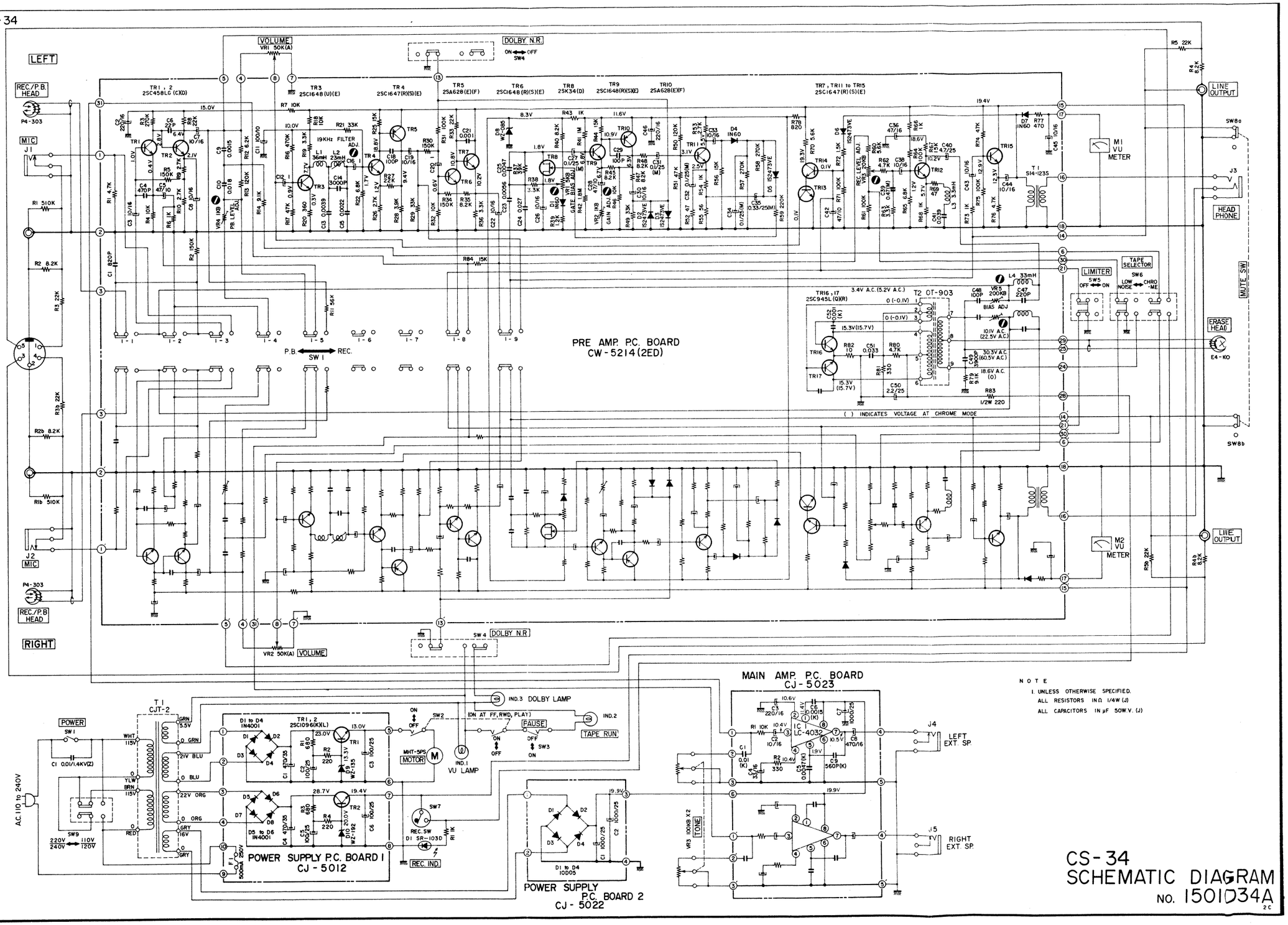
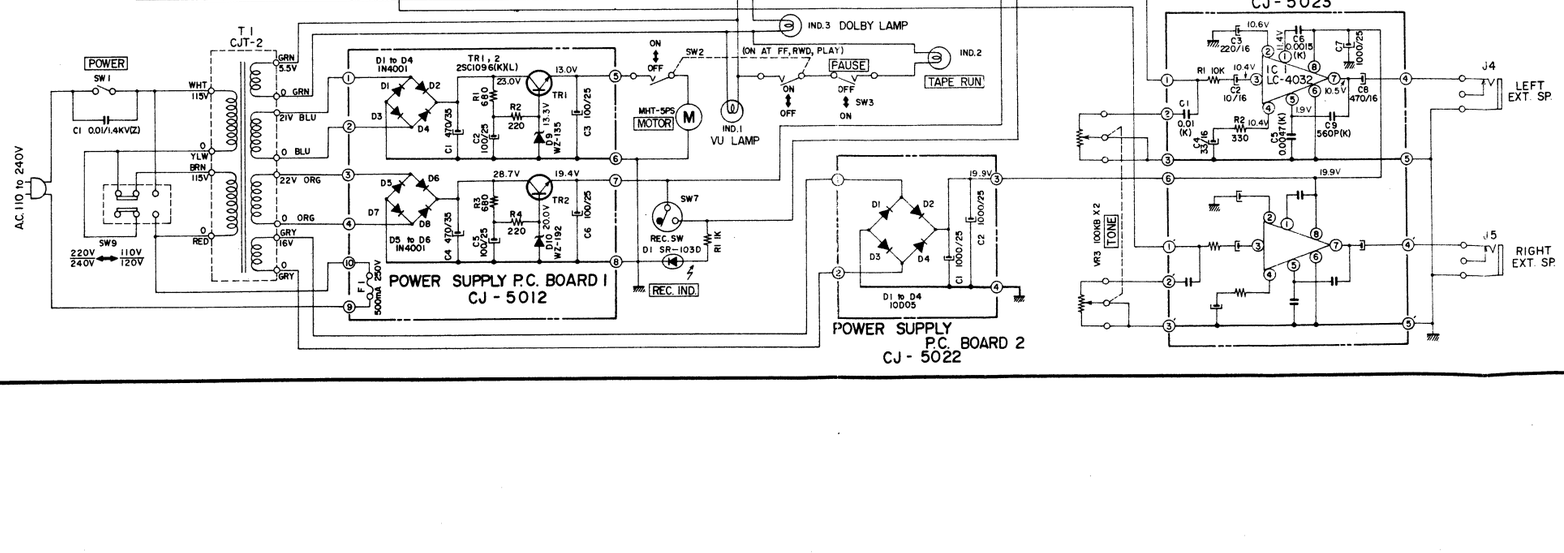
SECTION 3

SCHEMATIC DIAGRAM

1. CS-34D NO. 1501032A SCHEMATIC DIAGRAM
2. CS-34 NO. 1501034A SCHEMATIC DIAGRAM

CS-34





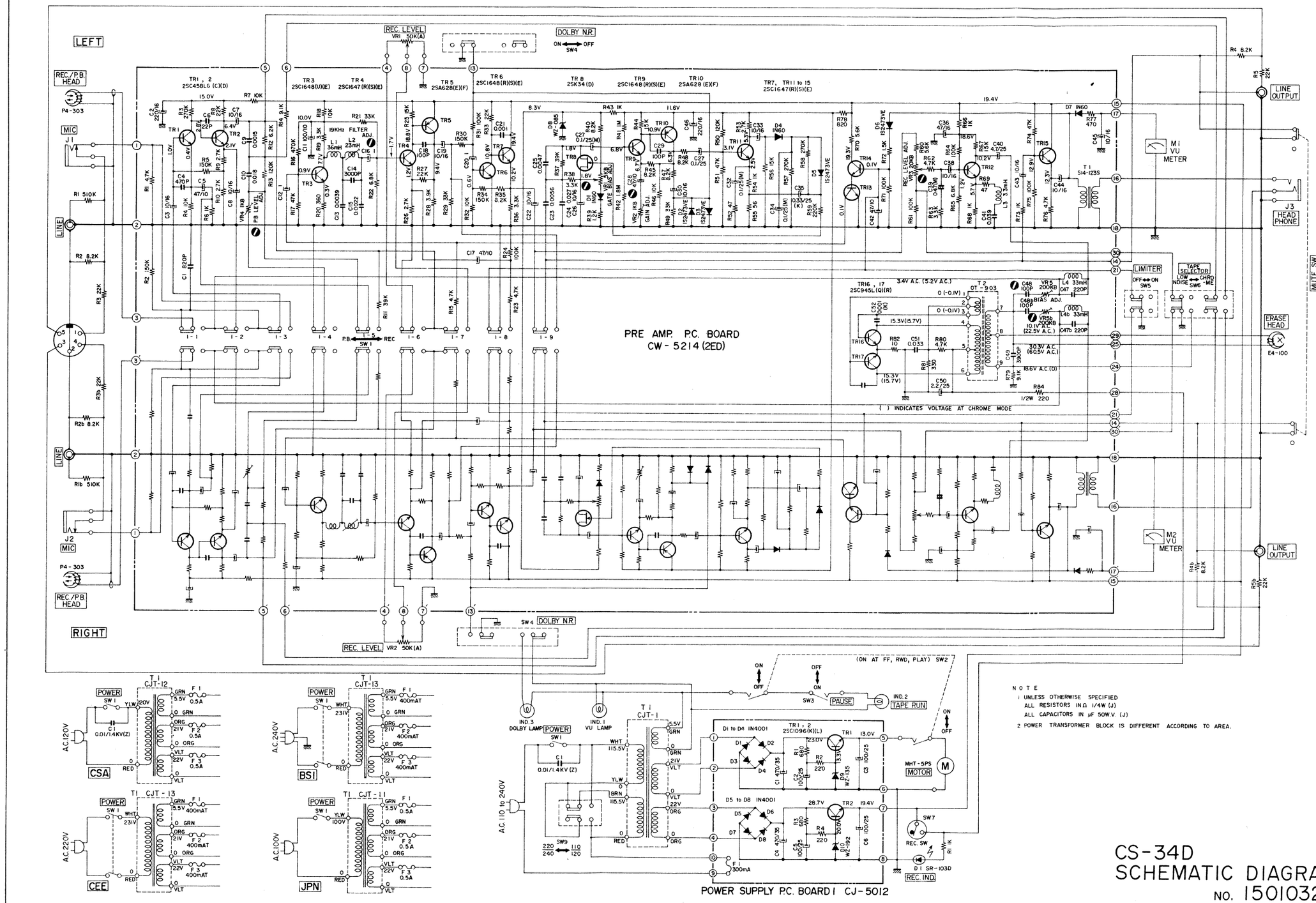
NOTE

1. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS IN Ω 1/4W (J)
   ALL CAPACITORS IN μF 50W.V. (J)

CS-34 SCHEMATIC DIAGRAM

NO. 1501D34A 2C

CS-34D



NOTE

1 UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN Ω 1/4W (J)
ALL CAPACITORS IN μF 50W.V. (J)

2 POWER TRANSFORMER BLOCK IS DIFFERENT ACCORDING TO AREA.

CS-34D
SCHEMATIC DIAGRAM
NO. 1501032A
2C